

Audi

Repair Manual Audi TT 2015 ➤

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5-Cylinder Direct Injection 2.5L 4V TFSI Engine (EA 855 EVO)

Engine ID	DAZ A	DNW A							
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Edition 11.2020

List of Workshop Manual Repair Groups

Repair Group

- 00 - General, Technical Data
- 10 - Engine Assembly
- 13 - Crankshaft, Cylinder Block
- 15 - Cylinder Head, Valvetrain
- 17 - Lubrication
- 19 - Cooling System
- 21 - Turbocharger, Supercharger
- 24 - Multiport Fuel Injection
- 26 - Exhaust System, Emission Controls
- 28 - Ignition/Glow Plug System

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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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5-Cylinder Direct Injection 2.5L 4V TFSI Engine (EA 855 EVO) - Edition 11.2020



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00 – General, Technical Data

1 Identification

(Edition 11.2020)

**Refer to ⇒ Servicing - 5-Cylinder 2.5L TFSI 4V Engine; Rep.
Gr. 00; Identification.**

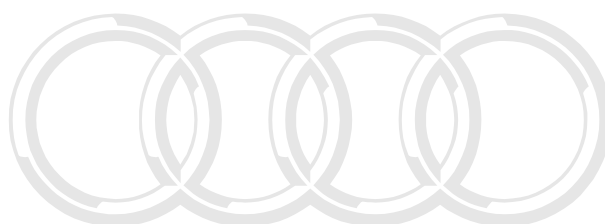
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2 Safety Precautions

Refer to ⇒ Servicing - 5-Cylinder 2.5L TFSI 4V Engine; Rep.
Gr. 00; Safety Precautions.



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3 Repair Information

Refer to ⇒ Servicing - 5-Cylinder 2.5L TFSI 4V Engine; Rep.
Gr. 00; Repair Information.



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10 – Engine Assembly

1 Engine, Removing and Installing

⇒ [R1.1 emoving", page 4](#)

⇒ [a1.2 nd Transmission, Separating", page 15](#)

⇒ [S1.3 ecurring to Engine and Transmission Holder", page 15](#)

⇒ [I1.4 nstalling", page 15](#)

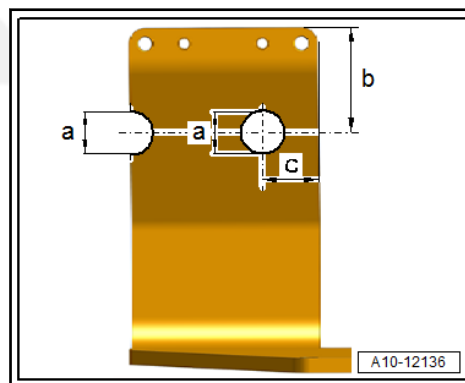
1.1 Engine, Removing

Special tools and workshop equipment required

- ◆ Pry Lever -80-200-
- ◆ Coolant Collection System -VAS5014- or Shop Crane - Drip Tray -VAS6208-
- ◆ Hose Clip Pliers -VAS6340-
- ◆ Hose Clip Pliers -VAS6362-
- ◆ Engine and Gearbox Jack -VAS6931-
- ◆ Engine Holder Bracket -T03000A-, or alternatively Engine Holder Bracket -T03000- with Pins -T0300/3-
- ◆ Commercially available Step Ladder
- ◆ Safety Gloves
- ◆ Protective Eyewear

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Tools, Preparing



- The -T03000A- is needed for the engine removal. If only the -T03000- is available it must be equipped with two holes.
- Hole -a- = 20 mm diameter.
- Dimension -b- = 45 mm.
- Dimension -c- = 34 mm
- In addition the Engine Holder Bracket - Pins T03000/3 are required.

Procedure

- The engine is removed downward together with the transmission.
- During installation, all cable ties must be installed at the same location.

- Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting.
- Drain the refrigerant circuit. Refer to ⇒ Refrigerant R1234yf Servicing; Rep. Gr. 87; Working with the A/C Service Station; Refrigerant Circuit, Discharging.

! WARNING

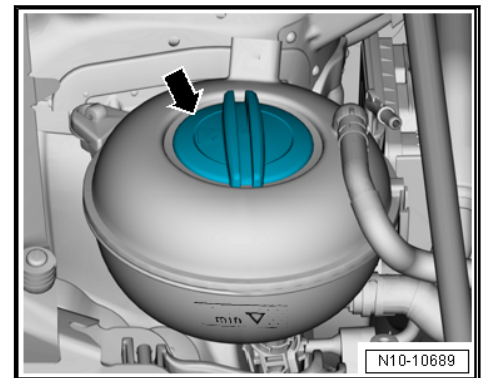
The cooling system is under pressure when the engine is warm. There is a risk of scalding due to hot steam and hot coolant.

Scalding the skin and other parts of the body is possible.

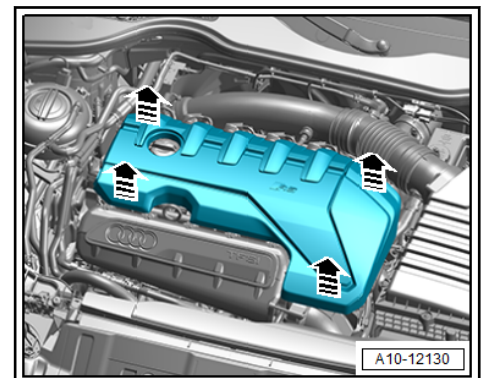
- Wear safety gloves.
- Wear protective eyewear.
- Reduce the pressure by covering the coolant expansion tank cap with a cloth and carefully opening it.

- Open the coolant reservoir cap -arrow-.

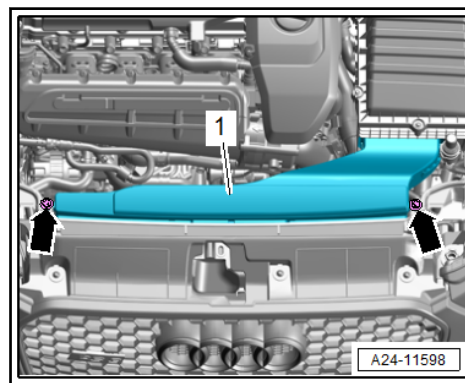
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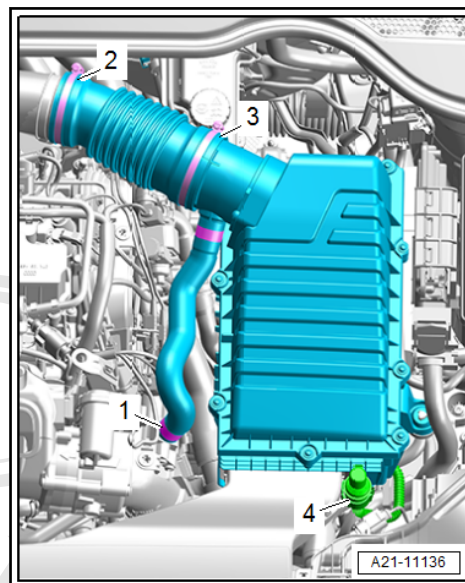
- Remove the subframe with the steering gear. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40; Subframe; Subframe and Steering Gear, Removing and Installing.
- Vehicle without particulate filter: remove the rear catalytic converter or the exhaust pipes. Refer to ⇒ [C2.3 atalytic Converter/Exhaust Pipe, Removing and Installing](#), page 109 .
- Remove the driveshaft. Refer to ⇒ Rear Final Drive; Rep. Gr. 39; Driveshaft; Driveshaft, Removing and Installing.
- Remove the engine cover upward in direction of -arrows-.



- Remove the bolts -arrows- and air duct -1-.

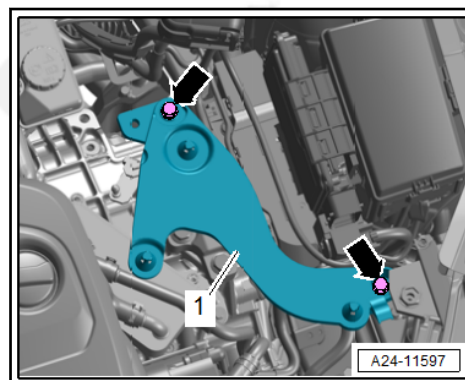


- Free up the transmission ventilation hose -4-.



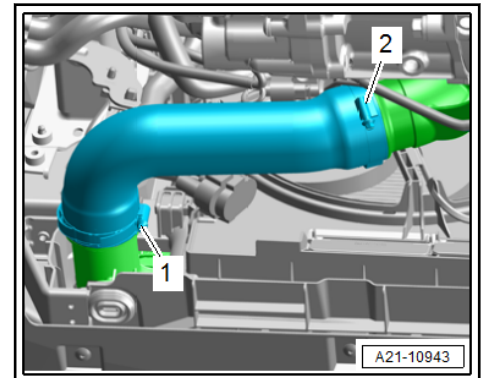
- Loosen the clamps -1 and 2- and remove the air duct hoses.
- Remove the air filter housing upward from the retaining pin.
- Free up the wiring harness on the bracket -1- for the air filter housing.

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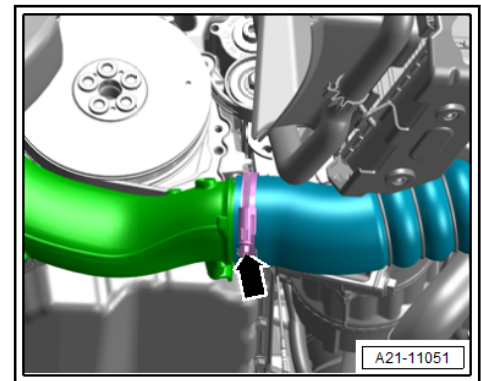


- Remove the bolts -arrows- and remove the bracket for the air filter housing.
- Vehicle with particulate filter: remove the catalytic converter. Refer to ⇒ Servicing - 5-Cylinder TFSI 2.5L Engine; Rep. Gr. 26; Emissions Control System; Catalytic Converter, Removing and Installing.

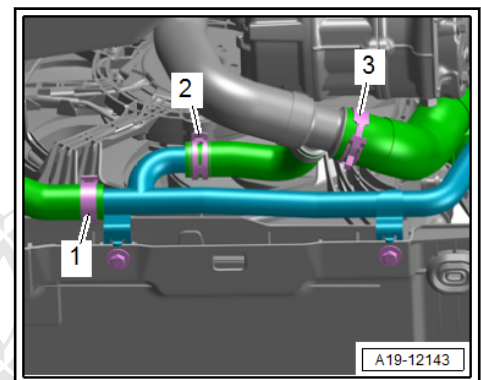
- Remove the front left and right wheel spoilers. Refer to
⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Front
Wheel Housing Liner, Removing and Installing.
- Loosen the hose clamp -1- and remove the air duct hose.



- Loosen the hose clamp -arrow- and remove the air duct hose.

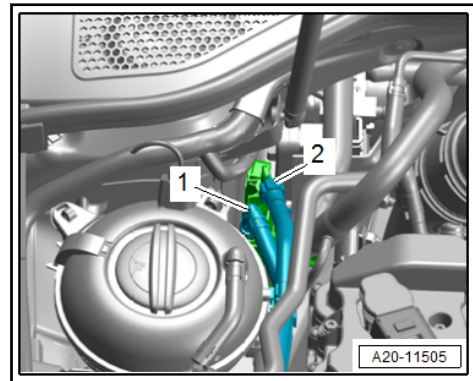
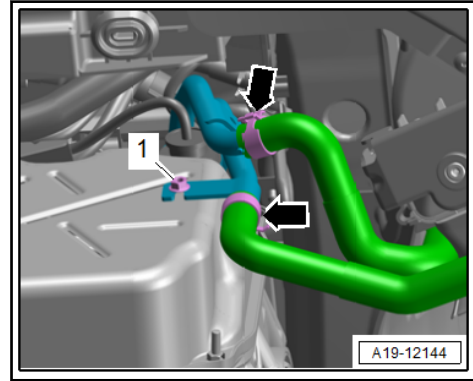


- Place the container of the -VAS5014- or the -VAS6208- underneath.

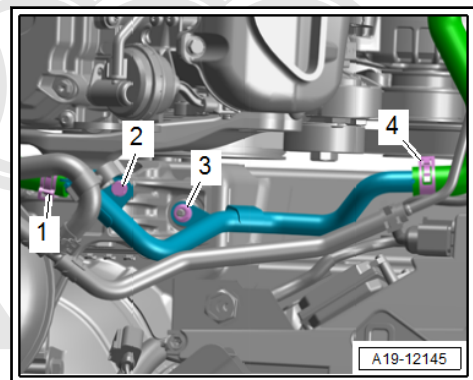


- Loosen the hose clamps -1, 2 and 3-, remove the coolant hoses and let the coolant drain out.
- Loosen the hose clamps -arrows-, remove the coolant hoses from the coolant pipes on the transmission and let the coolant drain.

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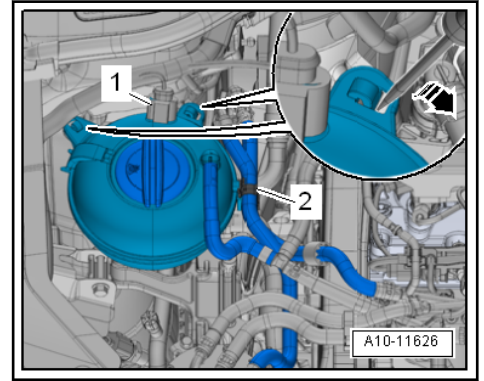


- Disconnect the fuel supply line -1-. Refer to ⇒ Fuel Supply System; Rep. Gr. 20; Connector Couplings; Connector Couplings, Disconnecting.
- Seal the open lines and connections with clean plugs from the -VAS6122-.
- Press the release buttons and disconnect the EVAP system hose -2-.
- Free up the hoses.
- Loosen the hose clamp -4- and remove the coolant hose.

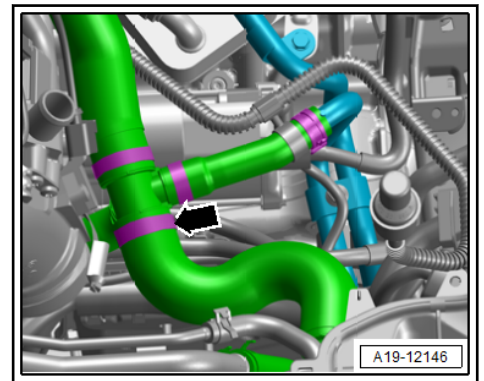


- Remove the bolt -2- and nut -3- and move the right coolant pipe to the side.
- Disconnect the connector -1- for the Engine Coolant Level Warning Switch -F66-.

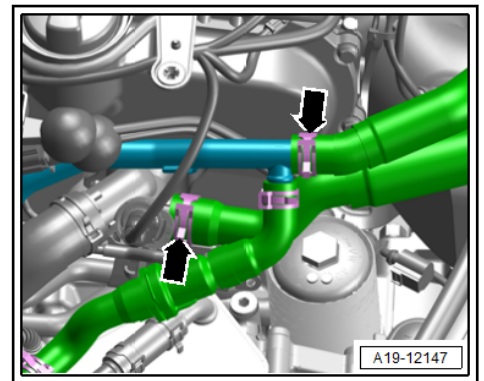
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- Release the retainers with a screwdriver in direction of -arrow- and move the coolant expansion tank to the side.
- Loosen the hose clamp -arrow- and remove the coolant hose.

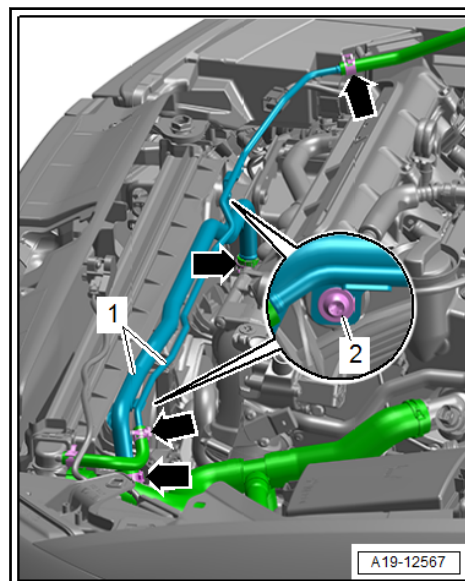


- Loosen the hose clamps -arrows- and remove the coolant hoses.

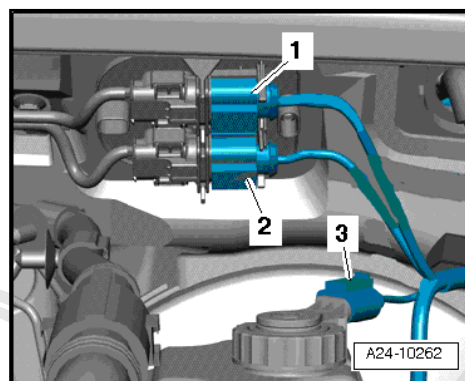


- Remove the bolt -2-.

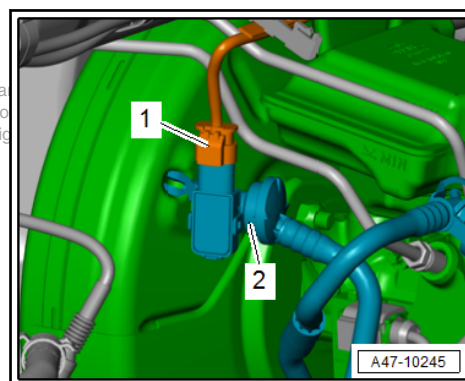
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- Press the coolant pipes -1- on the fan shroud slightly toward the rear.
- Remove the refrigerant line from the A/C compressor. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87; A/C Compressor; Refrigerant Lines on the A/C Compressor, Removing and Installing.
- Remove the connectors from bracket and disconnect:

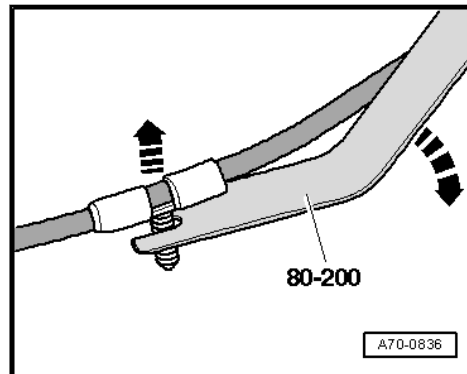


- 1 - For the Oxygen Sensor after Three Way Catalytic Converter -G130-
 - 2 - For the Heated Oxygen Sensor -G39-
- Free up electrical wires to oxygen sensors.
 - Disconnect the connector -1-.

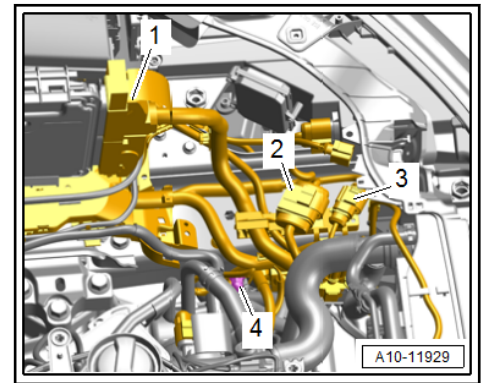


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- Remove the vacuum line -2- from the brake booster at the same time do not damage the vacuum line.
- Use -80-200- in the following steps to remove the spiral clips.



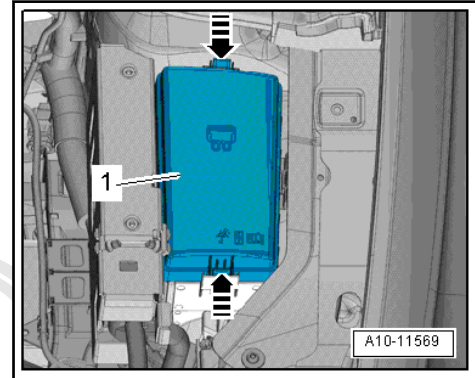
- Disconnect the connector -1- on the Engine Control Module - J623- and remove the engine control module from the bracket. Refer to ➔ [E8.1 Engine Control Module J623, Removing and Installing](#), page 103.



CAUTION

- Risk of destroying due to electrostatic discharge.**
- Do not touch the connector terminals by hand.
 - Touch a ground (for example the hoist) and discharge the static electricity.

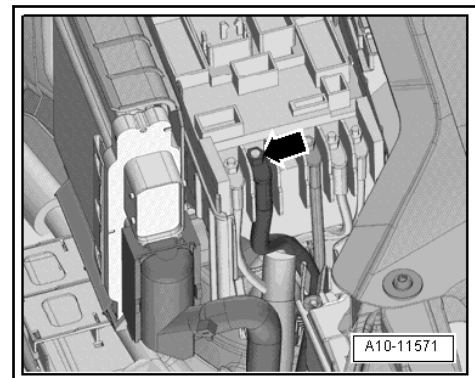
- To discharge static electricity, touch vehicle ground with hand (without gloves).
- Remove and disconnect the connector -3- for the Dual-Clutch Transmission Mechatronic -J743- from the bracket.
- Remove the connector -2- from the bracket and disconnect it.
- Free up the wires.
- Remove the nut -4- and free up the ground wire.
- Release the retainers in direction of -arrows- and remove the cover -1- from the engine compartment E-box.



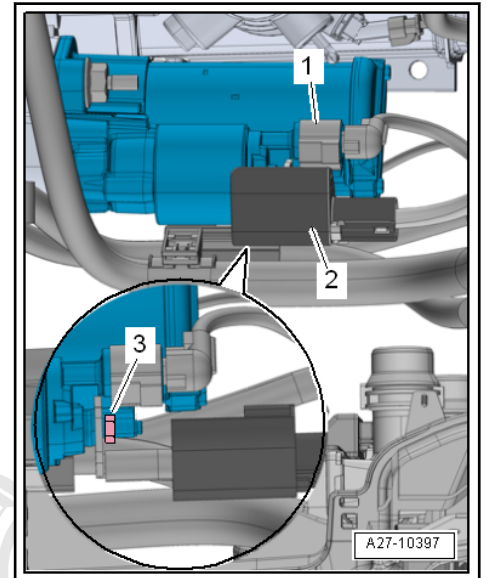
- Open the retainers with a screwdriver in direction of -arrow-, remove the cover -1- for the engine compartment E-box upward.



- Remove the nut -arrow- and free up the wire.

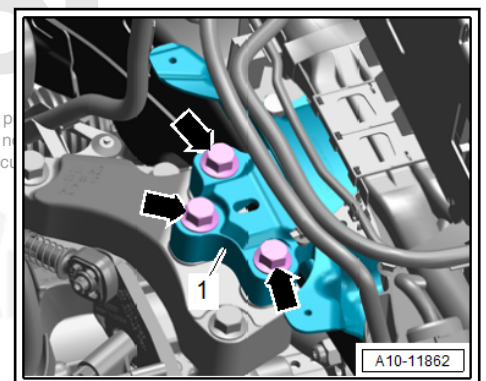


- Remove the selector lever cable from the transmission and pull it out of the cable bracket. Refer to ⇒ Dual-Clutch Transmission; Rep. Gr. 34; Selector Mechanism; Selector Mechanism, Removing and Installing.
- Disconnect the connector -1- by sliding the retainer toward the rear and pressing the release down.

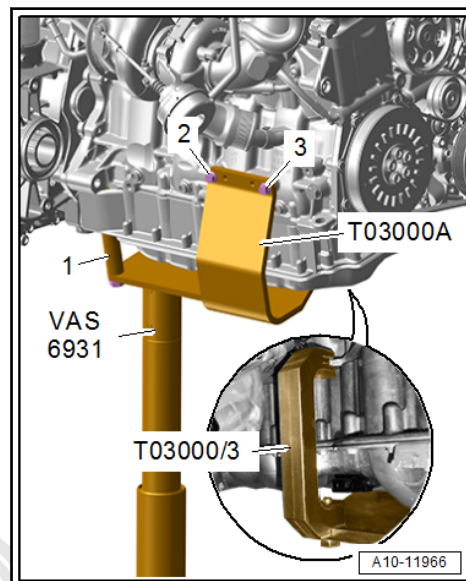


- Pry up the cap -2-.
- Remove the nut -3- and free up the terminal 30/B+ wire.
- Loosen the bolts -arrows- for the transmission mount -1- approximately two turns.

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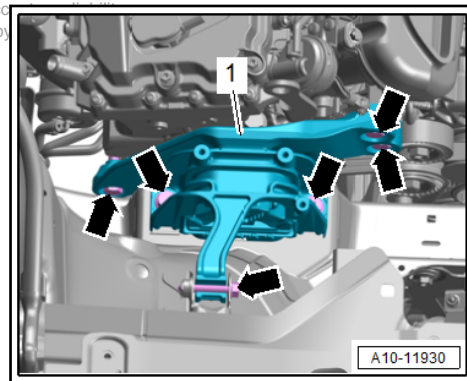
- Remove the left and right drive axles from the transmission and tie them up toward the rear. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40; Drive Axle; Drive Axle, Removing and Installing.
- Remove the -T03000/3- from the -T03000A-.



- Mount the -T03000A- on the cylinder block with the remaining pins -1- and install the bolts -2 and 3- by hand all the way.
- Install the -T03000/3- on the cylinder block and tighten to 20 Nm.
- Tighten the bolts -2 and 3- to 25 Nm.
- Install the -VAS6931- on the -T03000A- and slightly lift the engine/transmission assembly.

TIP:

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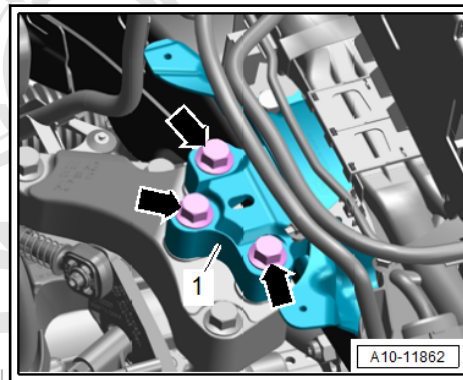
Use a step ladder to remove the subframe mount bolts.

- Remove the bolts -arrows- and engine mount -1-.

TIP:

The rear bolt in the cylinder block is accessible from the wheel housing side. To do so loosen the wheel housing liner and push to the side. Refer to ⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing.

- Remove the bolts -arrows- for the transmission mount -1-.



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CAUTION

Risk of damaging the lines and hoses, as well as the engine compartment by lowering the engine/transmission assembly.

- Make sure all connections between the engine, transmission, subframe and body have been disconnected.
- Carefully lower and guide the engine/transmission assembly out of the engine compartment.
- Make certain that there is enough clearance for the A/C compressor.
- Pay attention to the heat shield for the center tunnel.

- Move the transmission side of the engine/transmission assembly forward and then lower it.

1.2 Engine and Transmission, Separating

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 10; Engine, Removing and Installing; Engine and Transmission, Separating.

1.3 Engine, Securing to Engine and Transmission Holder

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 10; Engine, Removing and Installing; Engine on Engine and Transmission Holder, Securing.

1.4 Engine, Installing

Procedure

- The engine/transmission assembly is attached to the - T03000A-.
- Replace the bolts that were tightened with an additional turn after removing them.
- Replace the self-locking nuts and bolts, gaskets, seals and O-rings after removing.
- Secure all hose connections with hose clamps that match the ones used in series production. Refer to the Parts Catalog.
- During installation, all cable ties must be installed at the same location.
- Used coolant cannot be used again.

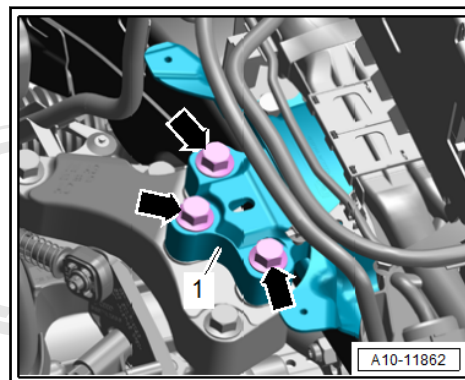
CAUTION

Do not place the sensor wheel near magnets (for example lamp base, speakers).

There is a risk of destroying the sensor wheel by magnetic force.

- Before installing the drive plate/flywheel or sensor wheel, check the function of the sensor wheel.

- Check the sensor wheel for engine speed sensor. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 13; Crankshaft; check the sensor wheel.
- Always replace the needle bearing in the crankshaft after the engine and transmission have been separated. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 13; Crankshaft; Needle Bearing in Crankshaft, Replacing.
- Tighten the transmission to the engine. Refer to ⇒ Dual-Clutch Transmission; Rep. Gr. 34; Transmission, Removing and Installing; Transmission, Installing.
- Bring the catalytic converter into the installation position and secure with the screw-type clamp on the turbocharger but do not tighten.
- Install the transmission fluid filter. Refer to ⇒ Dual-Clutch Transmission; Rep. Gr. 34; Transmission Fluid Circuit; Transmission Fluid Filter, Removing and Installing.
- Guide the engine/transmission assembly into the body.
- Install the engine mount. Refer to ⇒ [-2.1 Subframe Mount](#), page 19.
- Install the bolts -arrows- for the transmission mount -1- by hand all the way.



- Remove the -T03000A- from the engine.

Further installation is performed in reverse order of removal, while noting the following:

- Install the driveshaft. Refer to ⇒ Rear Final Drive; Rep. Gr. 39; Driveshaft; Driveshaft, Removing and Installing.
- Install the drive axles. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40; Drive Axle; Drive Axle, Removing and Installing.
- Install and adjust the selector lever cable. Refer to ⇒ Dual-Clutch Transmission; Rep. Gr. 34; Gearshift Mechanism; Selector Lever Cable, Checking and Adjusting.
- Install the air duct hoses and pipes. Refer to ⇒ [-2.1 Charge Air System](#), page 81 and ⇒ Servicing – 5-Cylinder 2.5L

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TFSI Engine; Rep. Gr. 21; Charge Air System; Overview - Charge Air Hose Connection.

- Install the refrigerant lines. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87; A/C Compressor; Refrigerant Lines on the A/C Compressor, Removing and Installing.
- Install the coolant pipes. Refer to ⇒ [-3.1 Coolant Pipes", page 65](#) and ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Coolant Pipes; Overview - Coolant Pipes.
- Install the subframe. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40; Subframe; Subframe with Steering Gear, Removing and Installing.
- Install the catalytic converter, rear catalytic converter or exhaust pipe. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 26; Emissions Control System; Catalytic Converter, Removing and Installing and ⇒ [C2.3 atalytic Converter/Exhaust Pipe, Removing and Installing", page 109](#) .
- Install the wheel spoiler. Refer to ⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Overview - Front Wheel Housing Liner.
- Mount the front wheels. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- Connect the fuel line. Refer to ⇒ Fuel Supply System; Rep. Gr. 20; Connector Couplings; Connector Couplings, Disconnecting.
- Adjust the subframe mount. Refer to ⇒ [M2.7 ount, Adjusting", page 31](#) .
- Install the air filter housing. Refer to ⇒ [-2.1 Air Filter Housing", page 95](#) .
- Tighten the ground wire. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.
- Check the oil level. Refer to ⇒ [Maintenance; Booklet 826](#).
- Follow all steps after connecting the battery. Refer to ⇒ [Electrical Equipment; Rep. Gr. 27; Battery; Battery, Disconnecting and Connecting](#).

CAUTION

There is a risk of destroying the control modules due to excessive voltage.

- **Do not use a battery charger to jump start!**

- Fill with coolant. Refer to ⇒ [D1.3 raining and Filling", page 54](#) .
- Install the engine cover. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.

After Removing or Replacing the Engine, a Second Program must be Performed.

- Connect the Vehicle Diagnostic Tester.
- Select Diagnostic operating mode and Start diagnostics.
- Select the Select individual test tab and select the following tree structure consecutively:
 - ◆ Drivetrain



- ◆ Select the engine code and engine
- ◆ 01 - OBD-capable systems.
- ◆ 01 - Engine Electronics
- ◆ 01 - Engine electronics, functions
- ◆ 01 - Chain length diagnostic adaptation
- ◆ and
- ◆ 0001 - Step after replacing components

Tightening Specifications

- ◆ The tightening specifications only apply to lightly greased, oiled, phosphated or blackened nuts and bolts.
- ◆ Additional lubricant such as engine oil or transmission fluid may be used, but do not use graphite lubricant.
- ◆ Do not use any ungreased parts.
- ◆ Tightening specification tolerance: $\pm 15\%$.

Component		Nm
Bolts/nuts	M6	10
	M7	15
	M8	22
	M10	40
	M12	65

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- ◆ Refer to ⇒ [-2.1 Subframe Mount., page 19](#)
- ◆ Refer to ⇒ Dual-Clutch Transmission; Rep. Gr. 34; Transmission, Removing and Installing; Transmission Tightening Specifications.

2 Subframe Mount

⇒ [-2.1 Subframe Mount", page 19](#)

⇒ [S2.2 upporting in Installation Position", page 21](#)

⇒ [M2.3 ount, Removing and Installing", page 23](#)

⇒ [M2.4 ount, Removing and Installing", page 26](#)

⇒ [S2.5 upport, Removing and Installing", page 29](#)

⇒ [M2.6 ount, Checking Adjustment", page 30](#)

⇒ [M2.7 ount, Adjusting", page 31](#)

2.1 Overview - Subframe Mount



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1 - Bolt

- ☐ 40 Nm +90°
- ☐ Always replace after removing.

2 - Engine Mount

- ☐ With support arm
- ☐ Adjustment, checking. Refer to ⇒ [M2.6 ount, Checking Adjustment](#), page 30
- ☐ Adjusting. Refer to ⇒ [M2.7 ount, Adjusting](#), page 31 .
- ☐ Removing and installing. Refer to ⇒ [M2.3 ount, Removing and Installing](#), page 23 .

3 - Bolt

- ☐ 40 Nm +90°
- ☐ Always replace after removing.

4 - Bolt

- ☐ 40 Nm +90°
- ☐ Always replace after removing.

5 - Bolt

- ☐ 20 Nm +90°
- ☐ Always replace after removing.

6 - Bolt

- ☐ 40 Nm +90°
- ☐ Always replace after removing.

7 - Bolt

- ☐ Tightening specification and sequence. Refer to ⇒ [Fig. “Pendulum Support - Tightening Specifications and Sequence”](#), page 21 .

8 - Pendulum Support

- ☐ Removing and installing. Refer to ⇒ [S2.5 upport, Removing and Installing](#), page 29 .

9 - Bolt

- ☐ Tightening specification and sequence. Refer to ⇒ [Fig. “Pendulum Support - Tightening Specifications and Sequence”](#), page 21 .

10 - Bolt

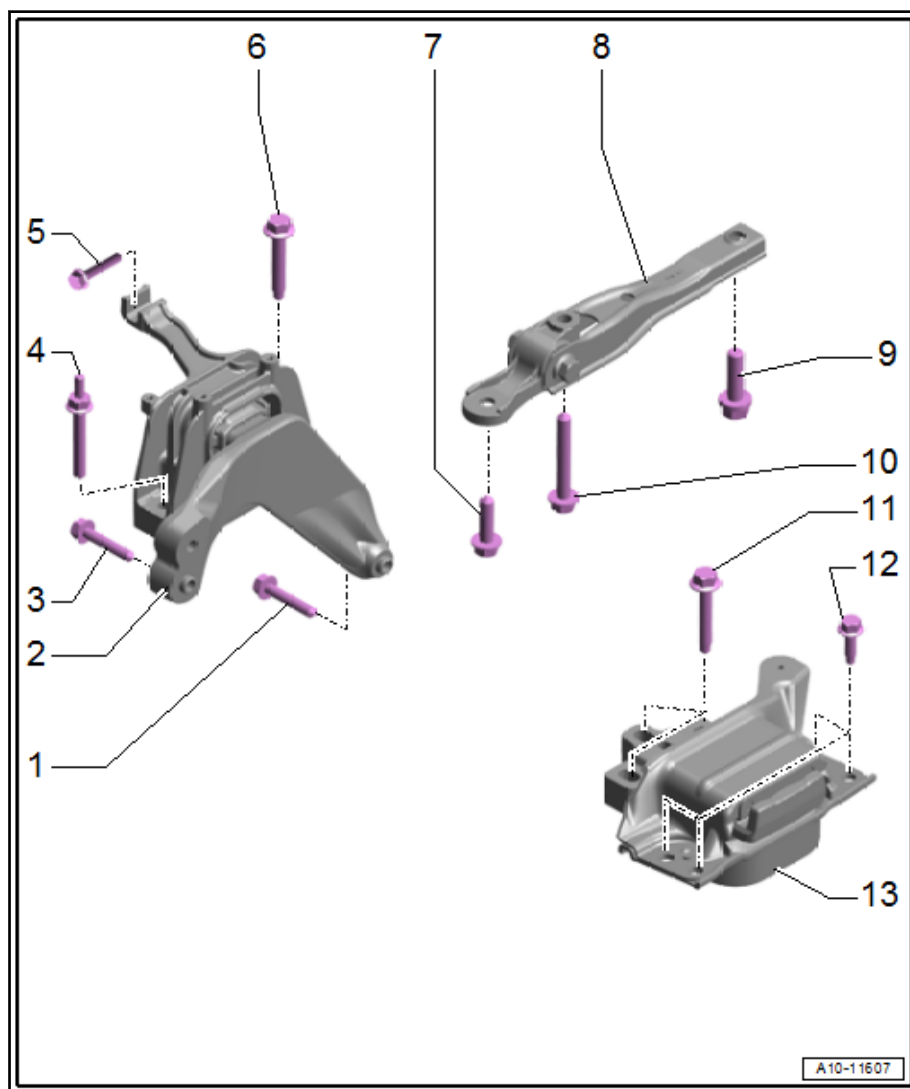
- ☐ Tightening specification and sequence. Refer to ⇒ [Fig. “Pendulum Support - Tightening Specifications and Sequence”](#), page 21 .

11, 12 - Bolts

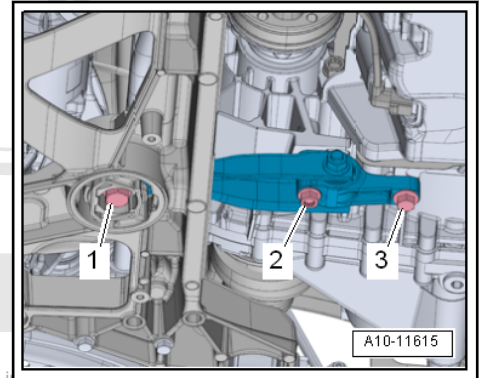
- ☐ Tightening specification. Refer to ⇒ Dual-Clutch Transmission; Rep. Gr. 34; Subframe Mount; Overview - Subframe Mount.

13 - Transmission Mount

- ☐ Adjustment, checking. Refer to ⇒ [M2.6 ount, Checking Adjustment](#), page 30
- ☐ Adjusting. Refer to ⇒ [M2.7 ount, Adjusting](#), page 31 .
- ☐ Removing and installing. Refer to ⇒ [M2.4 ount, Removing and Installing](#), page 26 .



Pendulum Support - Tightening Specifications and Sequence



- Replace the bolts that were tightened with an additional turn after removing them.
- Tighten the bolts in the steps shown in the sequence:

Step	Bolts	Tightening Specifications
1.	-2 and 3-	50 Nm
2.	-1-	130 Nm
3.	-1 to 3-	90° additional turn

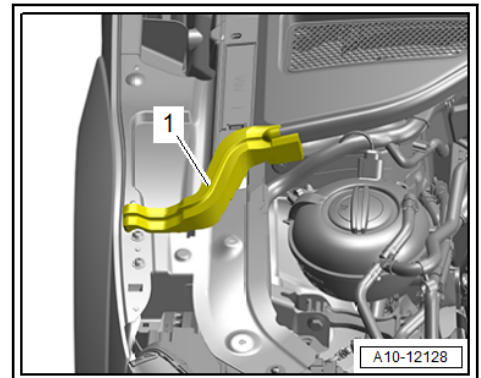
2.2 Engine, Supporting in Installation Position

Special tools and workshop equipment required

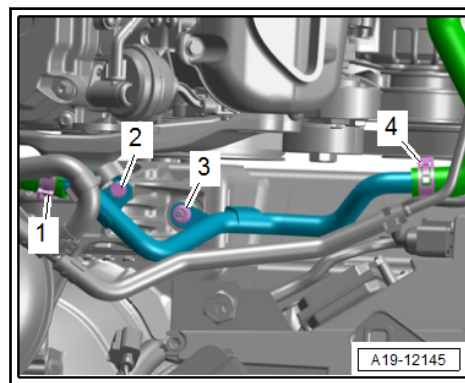
- ◆ Engine Support Bridge -10-222A-
- ◆ Engine Support - Bracket w/Spindle and hook -10-222A/10-
- ◆ Engine Support - Supplement Kit -T40093A-
- ◆ -T40093/6-
- ◆ Engine Support Plate -T40299-

Procedure

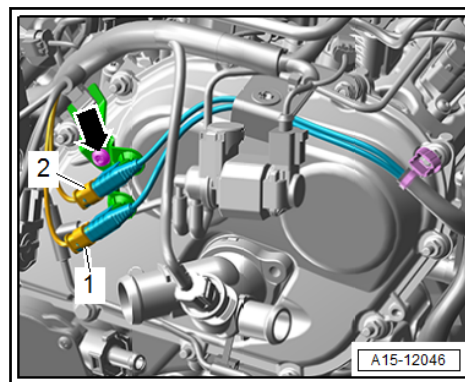
- Remove the air filter housing. Refer to [F2.2 ilter Housing, Removing and Installing", page 96](#) .
- Remove the left and right foam wedge -1- upward.



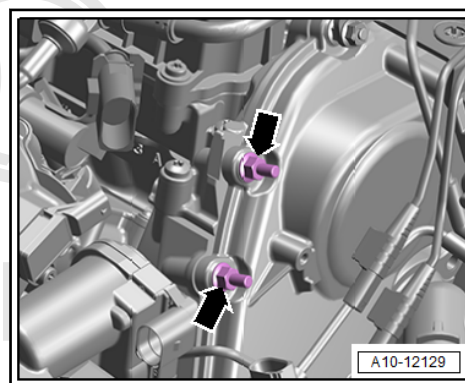
- Remove the bolt -2- and nut -3- and move the right coolant pipe to the side.



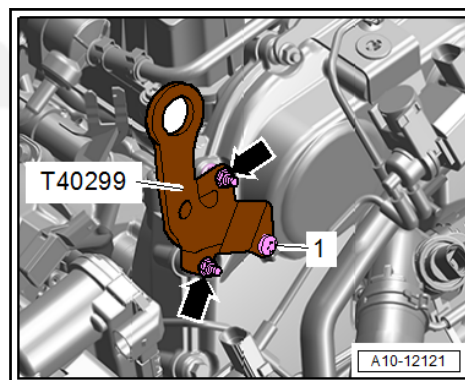
- Free up the wiring harness.



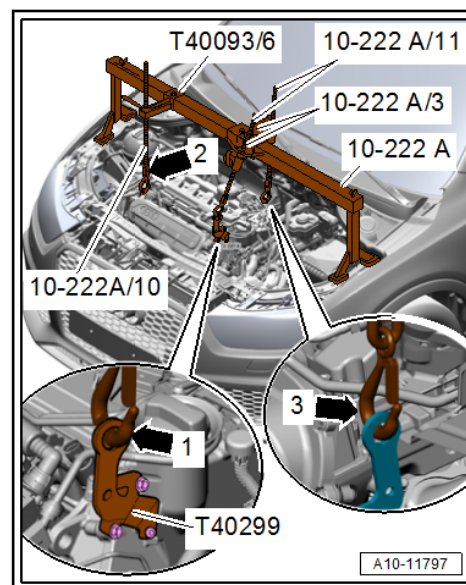
- Remove the connectors -1 and 2- from the bracket.
- Remove the bolt -arrow- and the bracket.
- Remove the bolts -arrows-.



- Tighten the -T40299- with the M5x25 bolts -arrows- and the M6x20 bolt -1- to 9 Nm.



- Position the -10-222A- on fender bolting edges.



- Engage the carabiner hook from the right front -10-222A/10- to the engine lifting eye -arrow 2-.
- Engage the carabiner hook from the left rear -10-222A/11- to the engine lifting eye -arrow 3-.
- Engage the carabiner hooks at the left front -10-222A/11- on the -T40299- -arrow 1-.
- Pretension the engine/transmission assembly with all the spindles evenly, but do not lift it.

Assembling

Assemble in the reverse order of removal. Note the following:

- Install the air filter housing. Refer to [⇒ F2.2 ilter Housing, Removing and Installing](#), page 96 .

Tightening Specifications

- ◆ Refer to [⇒ -2.1 Subframe Mount](#), page 19
- ◆ Refer to [⇒ Servicing – 5-Cylinder 2.5L TFSI Engine](#); Rep. Gr. 15; Timing Chain Cover; Overview - Timing Chain Cover.
- ◆ Refer to [⇒ Servicing – 5-Cylinder 2.5L TFSI Engine](#); Rep. Gr. 19; Coolant Pipes; Overview - Coolant Pipes.

2.3 Engine Mount, Removing and Installing

Special tools and workshop equipment required

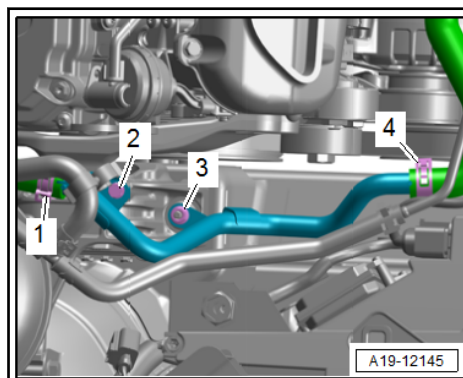
- ◆ Engine Support Bridge -10-222A-
- ◆ Engine Support - Bracket w/Spindle and hook -10-222A/10-
- ◆ Engine Support - Supplement Kit -T40093A-
- ◆ -T40093/6-
- ◆ M10 collar nut or nut with washer

Removing

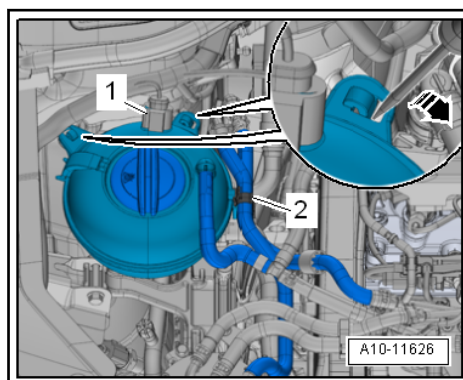
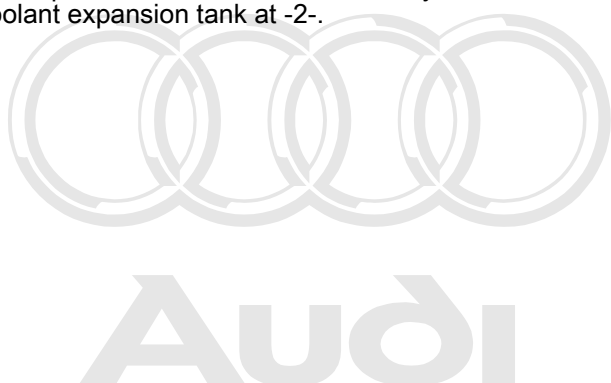
- Remove the right front wheel. Refer to [⇒ Suspension, Wheels, Steering](#); Rep. Gr. 44; Wheels, Tires.
- Detach the right front wheel housing liner from the longitudinal member. Refer to [⇒ Body Exterior](#); Rep. Gr. 66; Wheel

Housing Liner; Front Wheel Housing Liner, Removing and Installing.

- Remove the bolt -2- and nut -3- and move the right coolant pipe to the side.

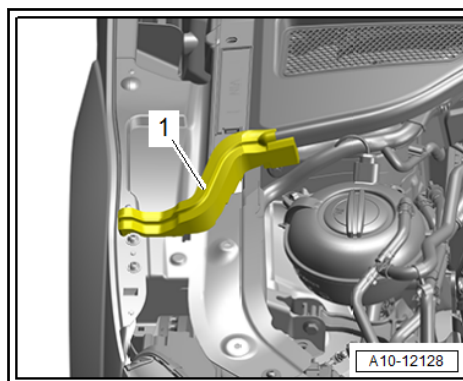


- Free up the fuel hose and the EVAP system hose from the coolant expansion tank at -2-.

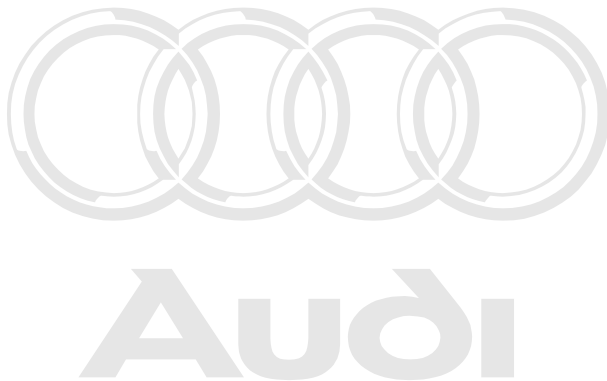


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- **Disconnect the connector -1- for the Engine Coolant Level Warning Switch -F66-.**
- Release the retainers with a screwdriver in direction of -arrow- and move the coolant expansion tank to the side.
- Remove the left and right foam wedge -1- upward.

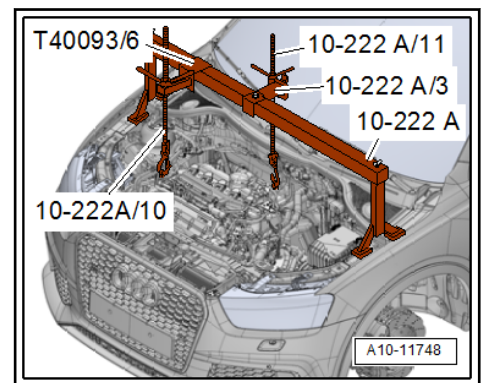
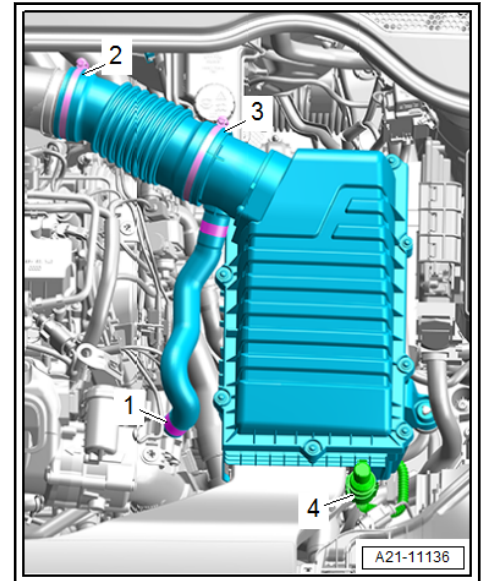


- Loosen the hose clamps -3- and remove the air duct hose.

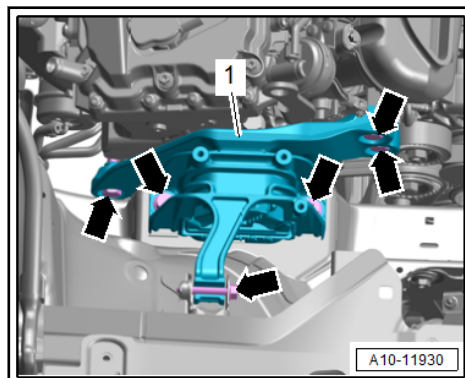


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- Position the -10-222A- on the fender bolting edges as shown.



- Attach the spindle carabiner hooks to the engine lifting eyes.
- Pretension the engine/transmission assembly with both spindles, but do not lift it.
- If the engine mount is going to be re-installed, mark its installation position.



- Remove the bolts -arrows- and engine mount -1-.

TIP:

The rear bolt in the cylinder block is accessible from the wheel housing side. To do so loosen the wheel housing liner and push to the side. Refer to ⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing.

Installing

Install in reverse order of removal and note the following:

- Replace the bolts that were tightened with an additional turn after removing them.
- Secure all hose connections with hose clamps that match the ones used in series production. Refer to the Parts Catalog.
- When re-installing the engine mount, align it according to the markings made earlier and fasten it in place.

Tightening Specifications

- ◆ Refer to ⇒ [-2.1 Subframe Mount”, page 19](#)
- ◆ Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Coolant Pipes; Overview - Coolant Pipes.
- ◆ Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Charge Air System; Overview - Charge Air Hose Connection.
- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Overview - Front Wheel Housing Liner.
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.

2.4 Transmission Mount, Removing and Installing

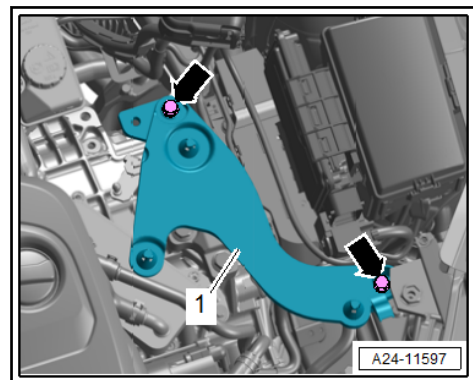
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Special tools and workshop equipment required

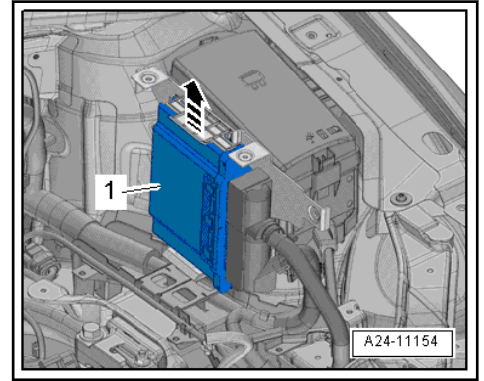
- ◆ Pry Lever -80-200-

Removing

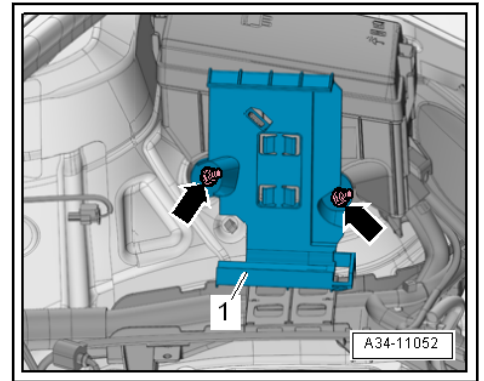
- Support the engine in the installation position. Refer to ⇒ [S2.2 supporting in Installation Position”, page 21](#) .
- Free up the wiring harness on the bracket -1- for the air filter housing.



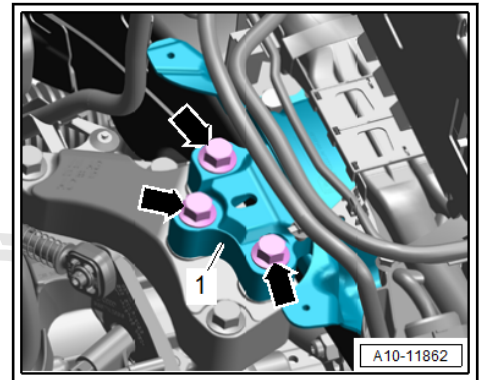
- Remove the bolts -arrows- and remove the bracket for the air filter housing.
- Remove the Engine Control Module -J623- -1- from the bracket. Refer to ⇒ [E8.1 Engine Control Module J623, Removing and Installing”, page 103](#) .



- Remove the bolts -arrows- and remove the bracket -1-.

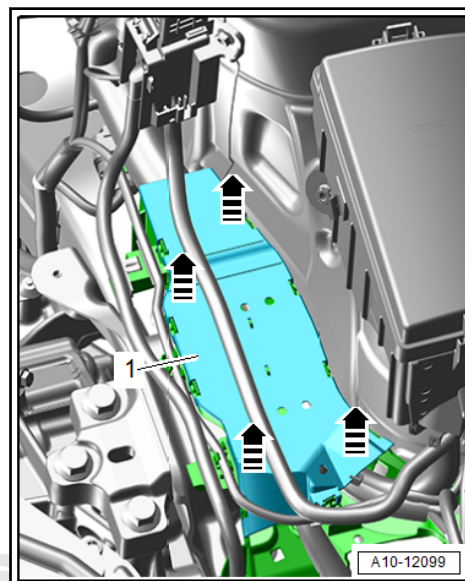


- Remove the bolts -arrows- for the transmission mount -1-.

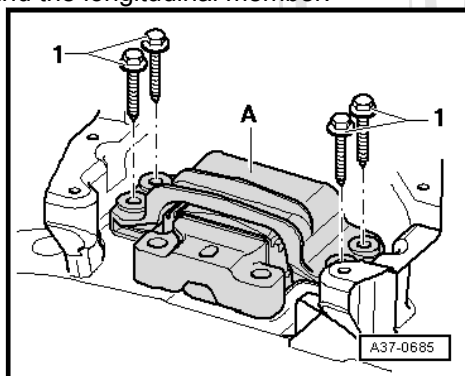


- Unclip the wiring guide with the -80-200- and press it upward in direction of -arrows-.

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- If the transmission mount is going to be re-installed, mark its installation position and the longitudinal member.

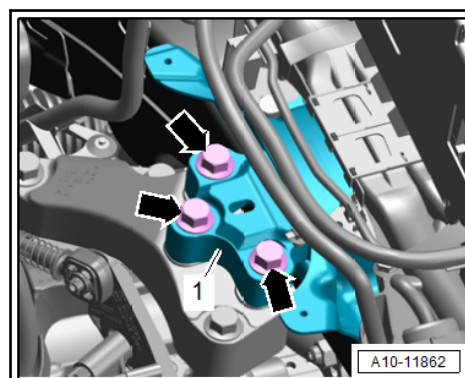


- Remove the bolts -1- and then the transmission mount -A-.

Installing

Install in reverse order of removal and note the following:

- Replace the bolts that were tightened with an additional turn after removing them.
- Fasten the transmission mount -A- on the longitudinal member.
- When re-installing the transmission mount -1-, align it according to the markings made earlier and fasten it in place -arrows-.



⚠ CAUTION

Risk of damaging threads in transmission support by inserting bolts at an angle.

- Before inserting the bolts, align the transmission support and the transmission mount support arm so that they are absolutely parallel to one another.
- If necessary, press up the rear transmission using a floor jack or the engine and transmission jack.

- Lift the transmission using the engine support bridge spindle until the transmission support touches the support arm.
- Remove the -10-222A- from the engine.
- Install the Engine Control Module -J623-. Refer to ⇒ [E8.1 Engine Control Module J623, Removing and Installing](#), page 103.

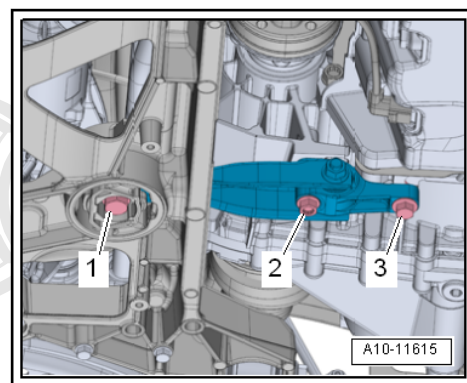
Tightening Specifications

- ◆ Refer to ⇒ [2.1 Air Filter Housing](#), page 95
- ◆ Refer to ⇒ Dual-Clutch Transmission; Rep. Gr. 34; Subframe Mount; Overview - Subframe Mount.
- ◆ Refer to ⇒ Electrical Equipment; Rep. Gr. 97; Relay Panels, Fuse Panels, E-Boxes; Component Location Overview - Relay Panels, Fuse Panels, E-Boxes.

2.5 Pendulum Support, Removing and Installing

Removing

- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66; Noise Insulation; Noise Insulation, Removing and Installing.
- Remove the bolts -1, 2 and 3- and remove the pendulum support.



Installing

Install in reverse order of removal.

Tightening Specifications

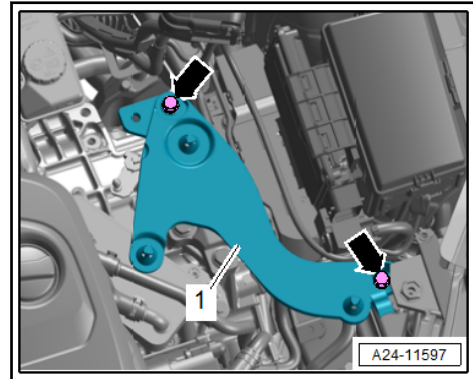
- ◆ Refer to ⇒ [Fig. "Pendulum Support - Tightening Specifications and Sequence"](#), page 21
- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 66; Noise Insulation; Overview - Noise Insulation.

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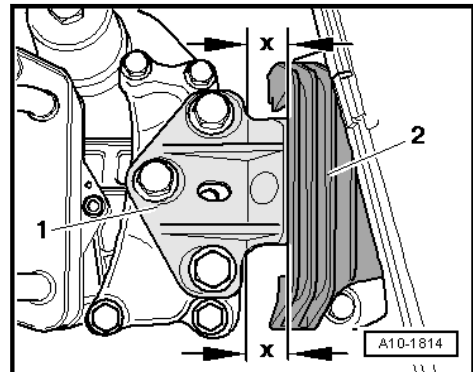
2.6 Subframe Mount, Checking Adjustment

Procedure

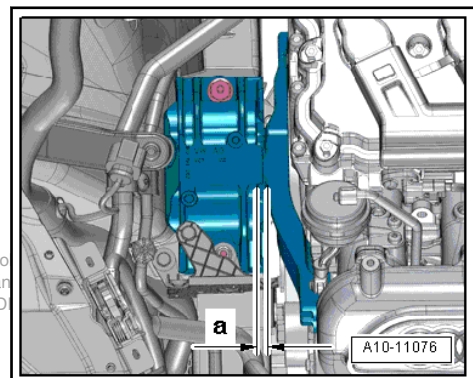
- Remove the air filter housing. Refer to [⇒ F2.2 ilter Housing, Removing and Installing”, page 96](#) .
- Free up the wiring harness on the bracket -1- for the air filter housing.



- Remove the bolts -arrows- and remove the bracket for the air filter housing.
- Make sure that the edges on the support arm -1- and transmission mount -2- are parallel on the transmission side.



- Dimension -x- = dimension -x-.
- Check the installation position at the engine mount:



- The support arm must be a distance of at least -a- = 9 mm to the engine mount.

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TIP:

The dimension -a- can be checked using a 9 mm drill bit, for example.

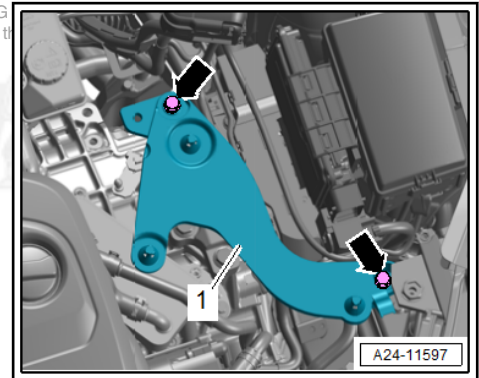
- If the distance measured is too small, adjust the subframe.
Refer to [⇒ M2.7 Mount, Adjusting](#), page 31.

2.7 Subframe Mount, Adjusting

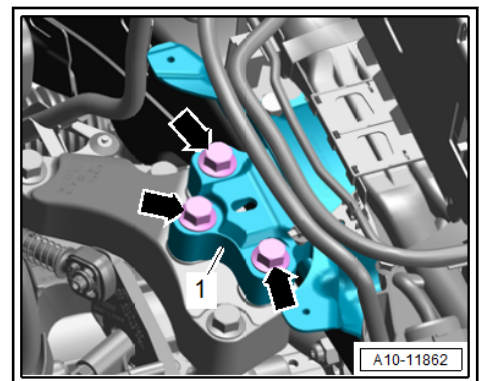
Procedure

- Support the engine in the installation position. Refer to [⇒ S2.2 supporting in Installation Position](#), page 21.
- Free up the wiring harness on the bracket -1- for the air filter housing.

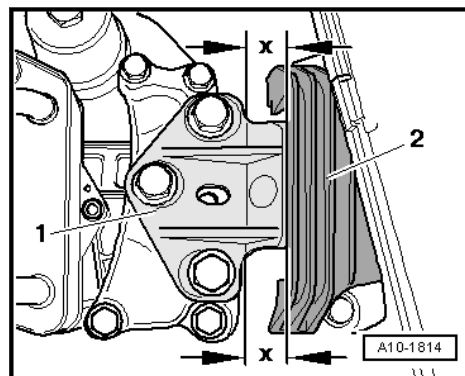
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- Remove the bolts -arrows- and remove the bracket for the air filter housing.
- Remove the bolts -arrows- for the transmission mount -1-.

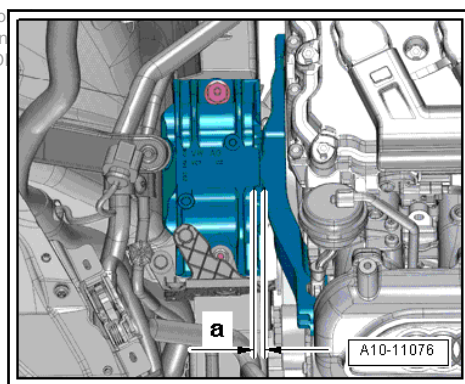


- Replace all 3 bolts one after another and install them by until they are in position.
- Make sure that the edges on the support arm -1- and transmission mount -2- are parallel on the transmission side.



- Dimension -x- = dimension -x-.
- Tighten the transmission mount bolts.
- Check the installation position at the engine mount:

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- The support arm must be a distance of at least -a- = 9 mm to the engine mount.

TIP:

The dimension -a- can be checked using a 9 mm drill bit, for example.

- If required, slide the engine/transmission assembly to the side.

Assembly is performed in reverse order.

Tightening Specifications

- ◆ Refer to ⇒ [-2.1 Subframe Mount”, page 19](#)
- ◆ Refer to ⇒ [-2.1 Air Filter Housing”, page 95](#)
- ◆ Refer to ⇒ Dual-Clutch Transmission; Rep. Gr. 34; Subframe Mount; Overview - Subframe Mount.

3 Engine Cover

Refer to ⇒ Servicing - 5-Cylinder 2.5L TFSI 4V Engine; Rep.
Gr. 10; Engine Cover.



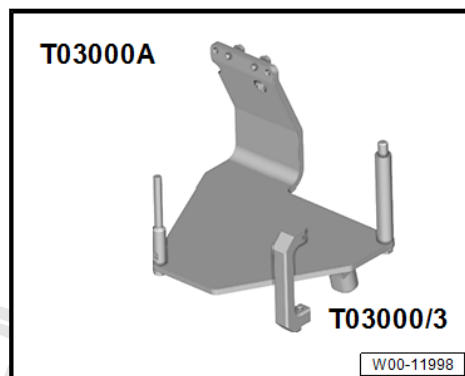
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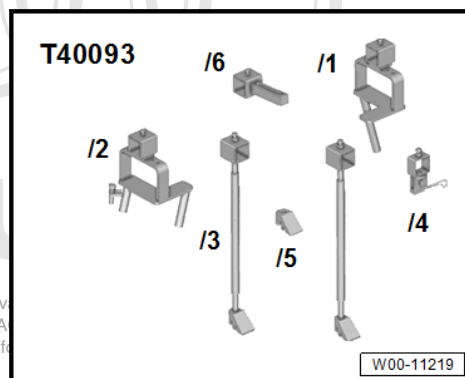
4 Special Tools

Special tools and workshop equipment required

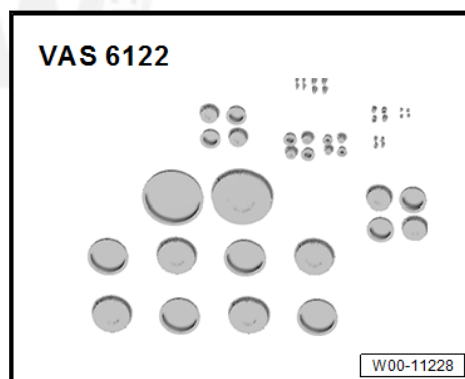
- ◆ Engine Holder Bracket -T03000A-, or alternatively Engine Holder Bracket -T03000- with Pins -T03000/3-.



- ◆ -T40093/6-



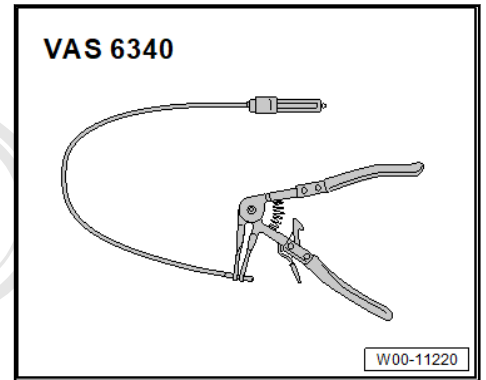
- ◆ Engine Bung Set -VAS6122-



- ◆ Coolant Collection System -VAS5014- or Shop Crane - Drip Tray -VAS6208-

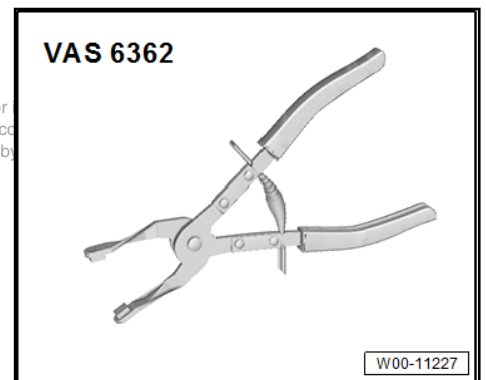


◆ Hose Clip Pliers -VAS6340-

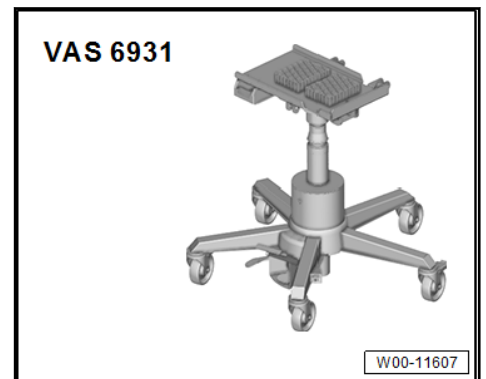


◆ Hose Clip Pliers -VAS6362-

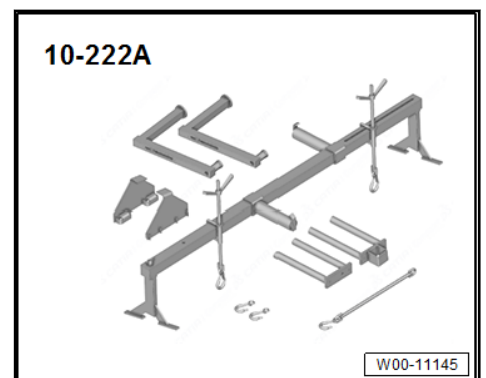
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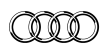


◆ Engine and Gearbox Jack -VAS6931-

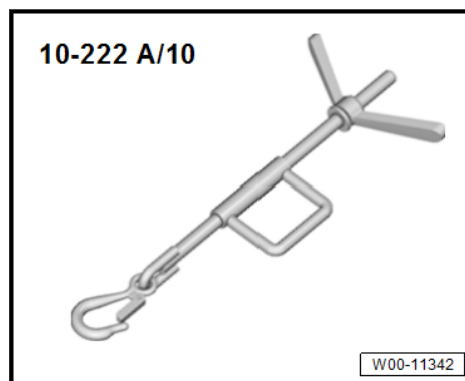


◆ Engine Support Bridge -10-222A-

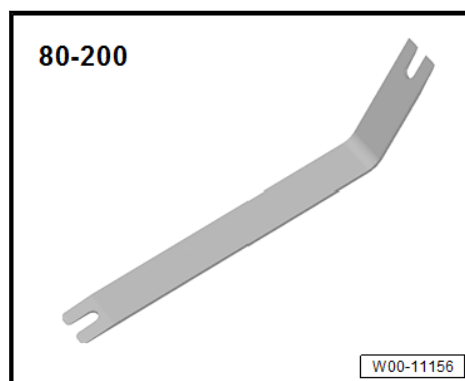




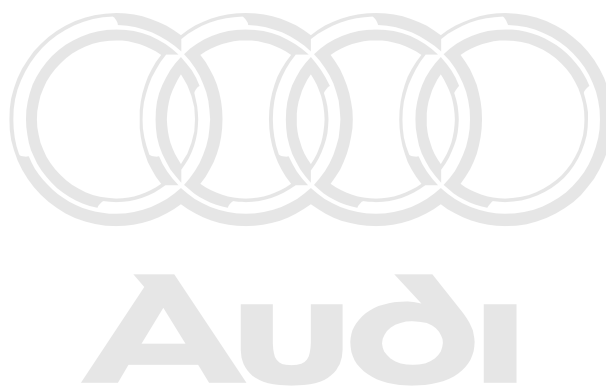
- ◆ Engine Support - Bracket w/Spindle and hook -10-222A/10-



- ◆ Pry Lever -80-200-



- ◆ Not Illustrated:
- ◆ Engine Support - Supplement Kit -T40093A-
- ◆ Engine Support Plate -T40299-



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13 – Crankshaft, Cylinder Block

1 Cylinder Block, Belt Pulley Side

⇒ -1.1 Ribbed Belt Drive", page 37

⇒ -1.2 Belt Pulley Side Sealing Flange", page 37

⇒ B1.3 elt, Removing and Installing", page 37

⇒ B1.4 elt Tensioner, Removing and Installing", page 38

⇒ D1.5 amper, Removing and Installing", page 38

⇒ B1.6 racket, Removing and Installing", page 38

⇒ F1.7 lange, Removing and Installing, Belt Pulley Side", page 38

1.1 Overview - Ribbed Belt Drive

Refer to ⇒ Servicing - 5-Cylinder 2.5L TFSI 4V Engine; Rep. Gr. 13; Cylinder Block, Belt Pulley Side; Overview - Ribbed Belt Drive.

1.2 Overview - Belt Pulley Side Sealing Flange

Refer to ⇒ Servicing - 5-Cylinder 2.5L TFSI 4V Engine; Rep. Gr. 13; Belt Pulley Side Cylinder Block; Overview - Belt Pulley Side Sealing Flange.

1.3 Ribbed Belt, Removing and Installing

Removing

- Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- Remove the front wheel spoiler as well as the wheel housing liner in the front area and push toward the rear. Refer to ⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing.

Refer to ⇒ Servicing - 5-Cylinder 2.5L TFSI 4V Engine; Rep. Gr. 13; Belt Pulley Side Cylinder Block; Ribbed Belt, Removing and Installing.

Tightening Specifications

- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Overview - Front Wheel Housing Liner.

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1.4 Ribbed Belt Tensioner, Removing and Installing

Refer to ⇒ Servicing - 5-Cylinder 2.5L TFSI 4V Engine; Rep. Gr. 13; Belt Pulley Side Cylinder Block; Ribbed Belt Tensioner, Removing and Installing.

1.5 Vibration Damper, Removing and Installing

Refer to ⇒ Servicing - 5-Cylinder 2.5L TFSI 4V Engine; Rep. Gr. 13; Belt Pulley Side Cylinder Block; Vibration Damper, Removing and Installing.

1.6 Sub-Assembly Bracket, Removing and Installing

Refer to ⇒ Servicing - 5-Cylinder 2.5L TFSI 4V Engine; Rep. Gr. 13; Belt Pulley Side Cylinder Block; Sub-Assembly Bracket, Removing and Installing.

1.7 Sealing Flange, Removing and Installing, Belt Pulley Side

Refer to ⇒ Servicing - 5-Cylinder 2.5L TFSI 4V Engine; Rep. Gr. 13; Belt Pulley Side Cylinder Block; Belt Pulley Side Sealing Flange, Removing and Installing.

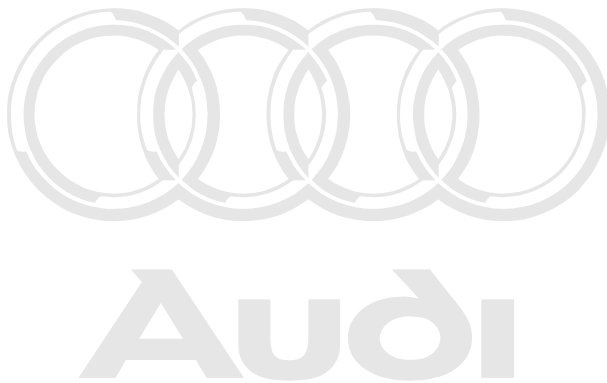


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2 Cylinder Block, Transmission Side

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 13; Transmission Side Cylinder Block.



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3 Crankshaft

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 13; Crankshaft.



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4 Pistons and Connecting Rod

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 13; Pistons and Connecting Rod.



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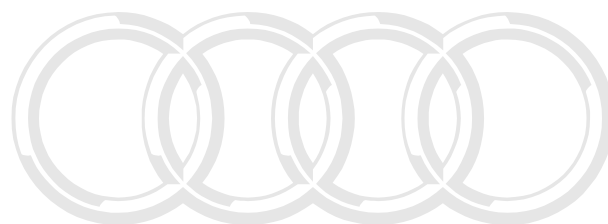
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15 – Cylinder Head, Valvetrain

1 Timing Chain Cover

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 15; Timing Chain Cover.



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2 Chain Drive

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 15; Chain Drive.



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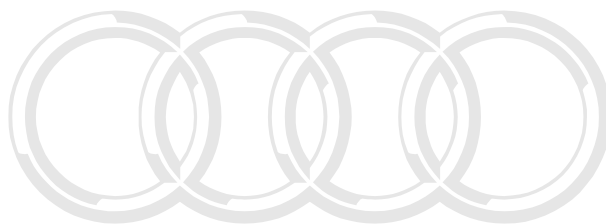
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3 Cylinder Head

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 15; Cylinder Head.



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4 Valvetrain

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 15; Valvetrain.



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5 Intake and Exhaust Valves

Refer to ⇒ Servicing - 5-Cylinder 2.5L TFSI 4V Engine; Rep.
Gr. 15; Intake and Exhaust Valves.



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17 – Lubrication

1 Oil Pan/Oil Pump

⇒ [-1.1 Oil Pan/Oil Pump", page 47](#)

⇒ [O1.2 il", page 47](#)

⇒ [P1.3 an Lower Section, Removing and Installing", page 47](#)

⇒ [P1.4 an Upper Section, Removing and Installing", page 47](#)

⇒ [P1.5 ump, Removing and Installing", page 47](#)

⇒ [O1.6 il Level Thermal SensorG266, Removing and Installing", page 47](#)

1.1 Overview - Oil Pan/Oil Pump

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 17; Oil Pan/Oil Pump; Overview - Oil Pan/Oil Pump.

1.2 Engine Oil

- ◆ Draining and filling the engine oil, checking the oil level and removing and installing the oil filter element. Refer to ⇒ Maintenance; Booklet 826.
- ◆ Oil capacities, oil specifications and viscosity classes. Refer to the ⇒ Fluid Capacity Tables; Rep. Gr. 03.

1.3 Oil Pan Lower Section, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 17; Oil Pan/Oil Pump; Oil Pan Lower Section, Removing and Installing.

1.4 Oil Pan Upper Section, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 17; Oil Pan/Oil Pump; Oil Pan Upper Section, Removing and Installing.

1.5 Oil Pump, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 17; Oil Pan/Oil Pump; Oil Pump, Removing and Installing.

1.6 Oil Level Thermal Sensor -G266-, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 17; Oil Pan/Oil Pump; Oil Level Thermal Sensor -G266-, Removing and Installing.

2 Engine Oil Cooler

⇒ [-2.1 Engine Oil Cooler”, page 48](#)

⇒ [O2.2 il Cooler, Removing and Installing”, page 48](#)

2.1 Overview - Engine Oil Cooler

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 17; Engine Oil Cooler; Overview - Engine Oil Cooler.

2.2 Engine Oil Cooler, Removing and Installing

⇒ [O2.2.1 il Cooler, Removing and Installing”, page 48](#)

⇒ [F2.2.2 ilter Bracket With Oil Cooler, Removing and Installing”, page 49](#)

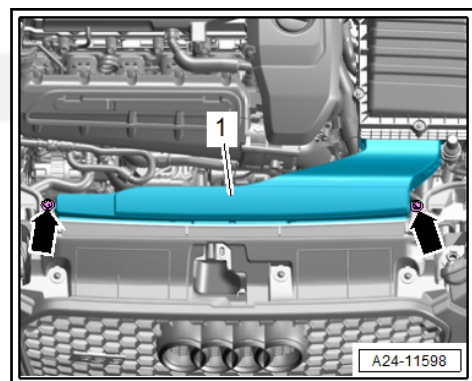
2.2.1 Engine Oil Cooler, Removing and Installing

Special tools and workshop equipment required

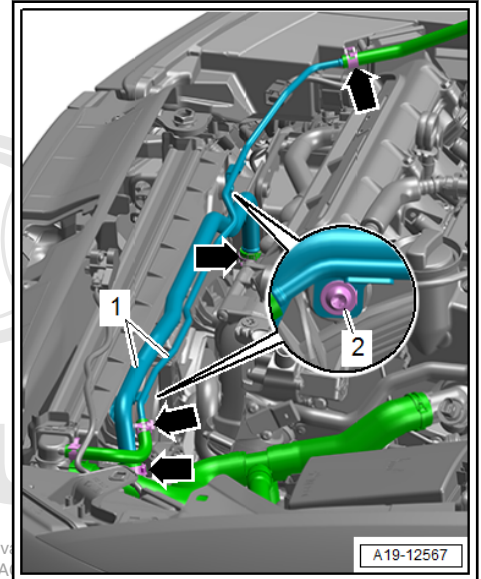
- ◆ Hose Clip Pliers -VAS6362-

Removing

- Drain the coolant. Refer to ⇒ [D1.3 raining and Filling”, page 54](#) .
- Remove the bolts -arrows- and air duct -1-.



- Remove the bolts -2-.



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- Loosen the hose clamps -arrows- and remove the coolant hoses.
- Remove the coolant pipes -1- from the fan shroud.

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 17; Engine Oil Cooler; Engine Oil Cooler, Removing and Installing.

Tightening Specifications

- ◆ Refer to ⇒ [-2.1 Air Filter Housing”, page 95](#)
- ◆ Refer to ⇒ [-3.1 Coolant Pipes”, page 65](#)

2.2.2 Oil Filter Bracket With Oil Cooler, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 17; Engine Oil Cooler; Engine Oil Cooler, Removing and Installing.



3 Oil Filter/Oil Pressure Switch

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 17; Oil Filter/Oil Pressure Switch.



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4 Crankcase Ventilation

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 17; Crankcase Ventilation.



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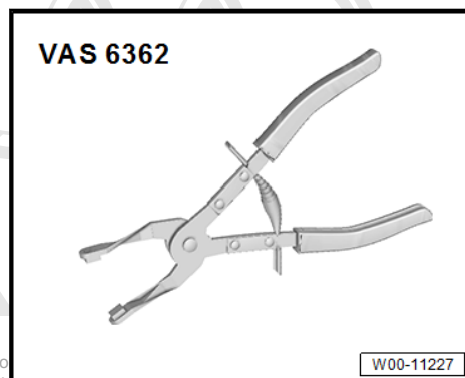
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5 Special Tools

Special tools and workshop equipment required

- ◆ Hose Clip Pliers -VAS6362-



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19 – Cooling System

1 Coolant System/Coolant

⇒ [D1.1 Diagram - Coolant Hoses", page 53](#)

⇒ [S1.2 System, Checking for Leaks", page 54](#)

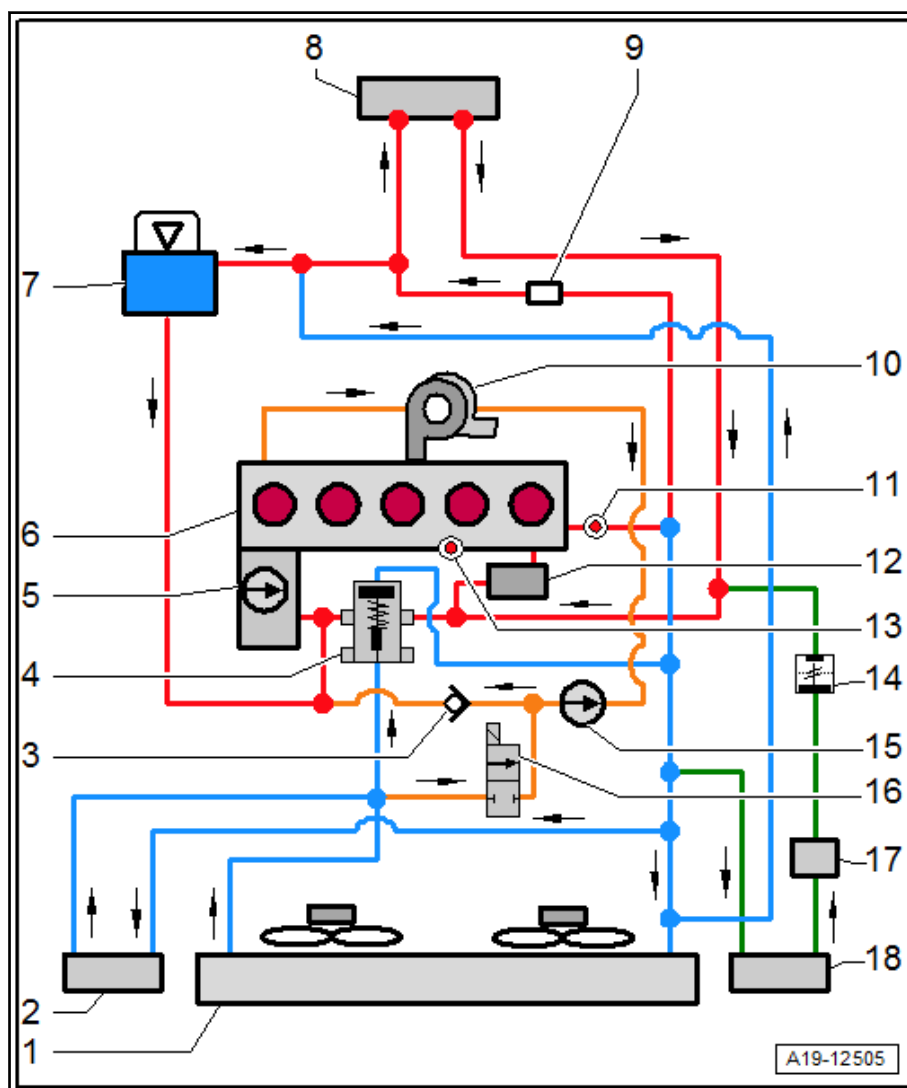
⇒ [D1.3 Draining and Filling", page 54](#)

1.1 Connection Diagram - Coolant Hoses

- ◆ Blue = Large coolant circuit.
- ◆ Red = Small coolant circuit.
- ◆ Orange = Turbocharger coolant circuit
- ◆ Green = Coolant circuit for the transmission.
- ◆ Arrows = Coolant flow direction.
- ◆ With the engine stationary and the water pump active, the after-run coolant pump creates a reversal of the flow direction of the coolant in connection with the switched cooling circuit solenoid valve.

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- 1 - Radiator
- 2 - Right Auxiliary Radiator
 - For the coolant
- 3 - Check Valve
 - The arrow points in the flow direction
- 4 - Coolant Thermostat With Housing
- 5 - Coolant Pump
- 6 - Cylinder Head/Cylinder Block
- 7 - Coolant Expansion Tank
 - With cap and pressure relief valve
 - Checking the pressure relief valve. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Cooling System/Coolant; Cooling System, Checking for Leaks.
- 8 - Heater Core for the Heater
- 9 - Volume Flow Limiter
- 10 - Turbocharger
- 11 - Engine Coolant Temperature Sensor -G62-
- 12 - Engine Oil Cooler
- 13 - Engine Temperature Control Sensor -G694-
- 14 - Coolant Thermostat
 - For transmission coolant circuit
- 15 - After-Run Coolant Pump -V51-
- 16 - Coolant Shut-Off Valve -N82-
- 17 - Heater Core
 - For transmission fluid
- 18 - Left Auxiliary Radiator
 - For transmission coolant circuit



1.2 Cooling System, Checking for Leaks

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Cooling System/Coolant; Cooling System, Checking for Leaks.

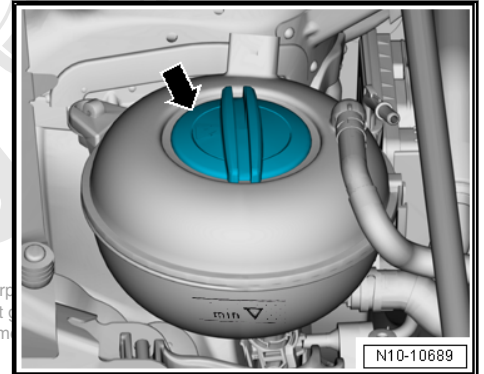
1.3 Coolant, Draining and Filling

Special tools and workshop equipment required

- ◆ Cooling System Tester - Adapter -VAG1274/8-
- ◆ Cooling System Charge Kit -VAS6096-

- ◆ Coolant Collection System -VAS5014- or Shop Crane - Drip Tray -VAS6208-
- ◆ Hose Clip Pliers -VAS6340-
- ◆ Hose Clip Pliers -VAS6362-
- ◆ Refractometer -T10007A-
- ◆ Safety Gloves
- ◆ Protective Eyewear

Draining



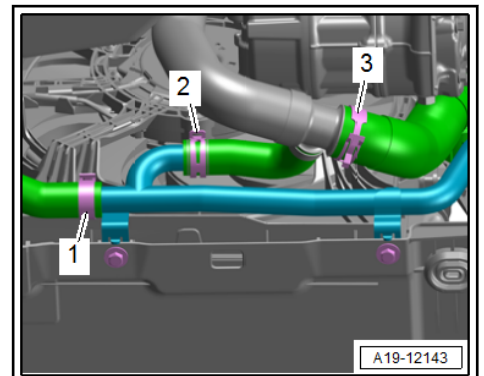
WARNING

The cooling system is under pressure when the engine is warm. There is a risk of scalding due to hot steam and hot coolant.

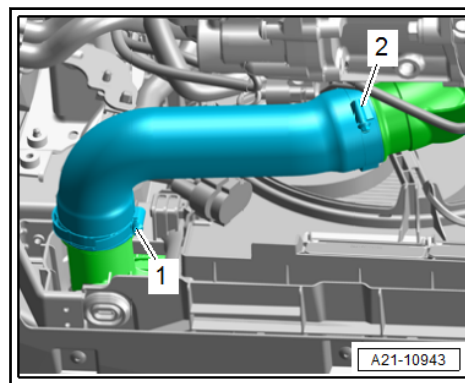
Scalding the skin and other parts of the body is possible.

- Wear safety gloves.
- Wear protective eyewear.
- Reduce the pressure by covering the coolant expansion tank cap with a cloth and carefully opening it.

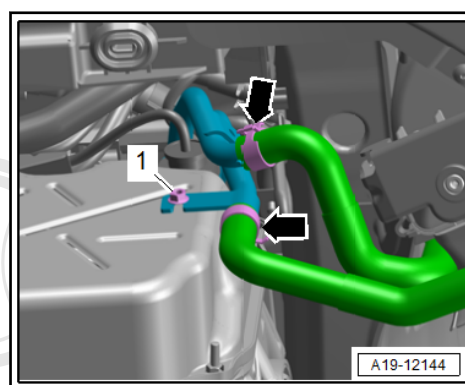
- Open the coolant reservoir cap -arrow-.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66; Noise Insulation; Noise Insulation, Removing and Installing.
- Place the container of the -VAS5014- or the -VAS6208- underneath.



- Loosen the hose clamp -1- and remove the coolant hose and let the coolant drain out.
- Loosen the hose clamp -1- and remove the air duct hose from the air duct pipe.



- Loosen the hose clamps -arrows-, remove the coolant hoses from the coolant pipes on the transmission and let the coolant drain.



- Secure all hose connections with hose clamps that match the ones used in series production. Refer to the Parts Catalog.
- Reconnect the coolant hoses.

Coolant Specification

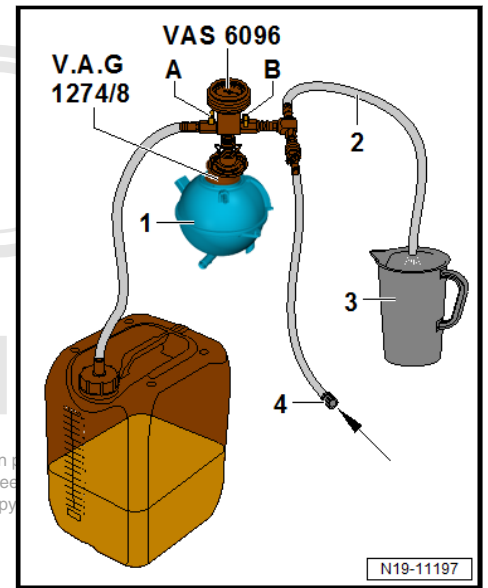
Refer to ⇒ Servicing – 4-Cylinder 1.8L, 2.0L 4V TFSI Engine, Rep. Gr. 19; Cooling System/Coolant; Coolant, Draining and Filling.

Coolant Mixture Ratio

- Coolant (40%) and water (60%) for freeze protection -25 °C (-13 °F)
- Coolant (50%) and water (50%) for freeze protection -35 °C (-31 °F)
- Coolant. Refer to the Parts Catalog.

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Coolant, Filling

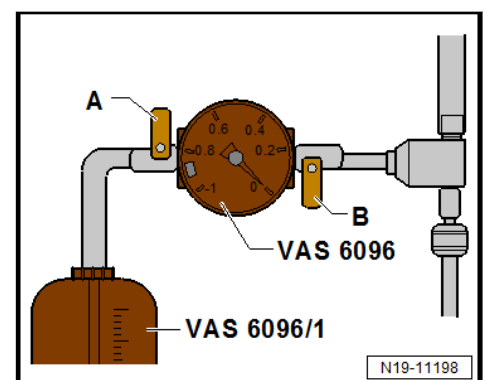


- Fill the coolant reservoir of the -VAS6096- with ten liters of premixed coolant with the proper mixture ratio. Refer to [page 56](#).
- Install the -VAG1274/8- on the coolant expansion tank -1-.
- Attach the -VAS6096- on the -VAG1274/8-.
- Place the drain hose -2- in a small container -3-.

TIP:

A small amount of coolant which should be collected is drawn off with the discharged air.

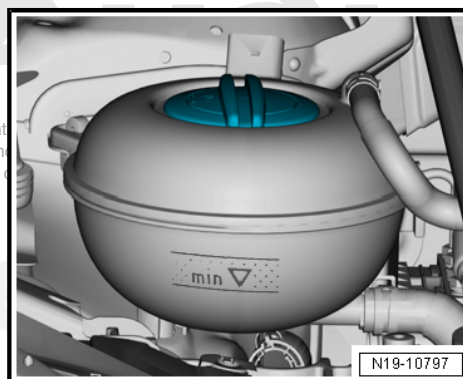
- Close the valves -A and B- by turning lever at a right angle to the flow direction.
- Connect the hose -4- to compressed air.
- Pressure: 7 to 10 bar (101.52 psi to 145.03 psi) positive pressure.
- Open the valve -B- by turning the lever in the flow direction.



- The suction jet pump generates pressure in the coolant system; indicator on display instrument must move into green area.
- Briefly open the valve -A- by turning the lever in the flow direction so that the hose on the -VAS6096- coolant reservoir fills with coolant.

- Close the valve -A- again.
- Leave the valve -B- open another two minutes.
- More pressure is generated in the coolant system by the suction jet pump; indicator on display instrument must stay in the green area.
- Close the valve -B-.
- Needle in the display instrument must remain in the green region, then the sufficient vacuum in the cooling system is obtained for the upcoming filling.
- Repeat the procedure if the needle goes below the green range.
- Check the cooling system for leaks if the pressure drops.
- Remove the pressure hose.
- Open the valve -A-.
- Coolant is extracted from the Cooling System Charge Kit -VAS 6096- coolant reservoir by pressure in the coolant system and the system is filled.
- Remove the Cooling System Charge Kit -VAS 6096- from the coolant expansion tank.
- Fill the coolant up to “max” marking.

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- Close the coolant expansion tank cap until it locks into place.

Bleed Cooling System.

- Install the air duct hose. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Charge Air System; Overview - Charge Air Hose Connection.
- Start the engine and bring to operating temperature.

Duration	Engine Speed	Conditions
2 Minutes	1500 RPM	<ul style="list-style-type: none"> • A/C system “OFF”, the LED in the AC button does not turn on • Heater on “HI”, blower speed as low as possible (= 0)
Until both large coolant hoses on the radiator are warm	Idle	<ul style="list-style-type: none"> • A/C system “OFF” • Heater “HI”
2 Minutes	1500 RPM	<ul style="list-style-type: none"> • A/C system “OFF” • Heater “HI”

- Turn off the engine.
- Install the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66; Noise Insulation; Overview - Noise Insulation.

Coolant Level, Checking

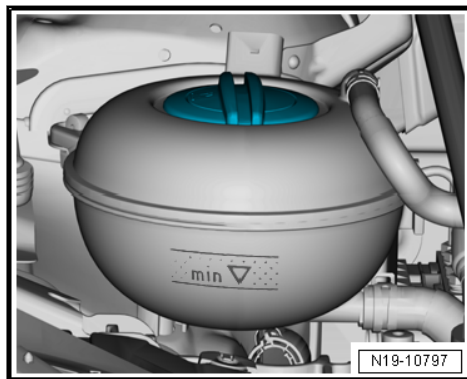
WARNING

The cooling system is under pressure when the engine is warm. There is a risk of scalding due to hot steam and hot coolant.

Scalding the skin and other parts of the body is possible.

- Wear safety gloves.
- Wear protective eyewear.
- Reduce the pressure by covering the coolant expansion tank cap with a cloth and carefully opening it.

- Coolant level must be at “MAX” mark when the engine is cold.



- Coolant level may be above “MAX” mark with engine at operating temperature.
- If the coolant level drops during the first bleeding procedure, fill the coolant again and repeat the bleeding procedure. Refer to ⇒ [page 58](#).

Tightening Specifications

- ◆ Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Charge Air System; Overview - Charge Air Hose Connection.

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2 Coolant Pump/Coolant Thermostat

⇒ [-2.1 Coolant Pump/Coolant Thermostat", page 60](#)

⇒ [-2.2 Electric Coolant Pump", page 60](#)

⇒ [-2.3 Engine Coolant Temperature Sensor", page 60](#)

⇒ [C2.4 Coolant Pump, Removing and Installing", page 60](#)

⇒ [P2.5 Pump, Removing and Installing", page 61](#)

⇒ [T2.6 Thermostat, Removing and Installing", page 64](#)

⇒ [D2.7 Distribution Housing, Removing and Installing", page 64](#)

⇒ [E2.8 Engine Coolant Temperature Sensor G62, Removing and Installing", page 64](#)

⇒ [E2.9 Engine Temperature Control Temperature Sensor G694, Removing and Installing", page 64](#)

⇒ [V2.10 Valves, Removing and Installing", page 64](#)

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2.1 Overview - Coolant Pump/Coolant Thermostat

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Coolant Pump/Coolant Regulation; Overview - Coolant Pump/Coolant Regulation.

2.2 Overview - Electric Coolant Pump

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Coolant Pump/Coolant Regulation; Overview - Electric Coolant Pump.

2.3 Overview - Engine Coolant Temperature Sensor

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Coolant Pump/Coolant Regulation; Overview - Engine Coolant Temperature Sensor.

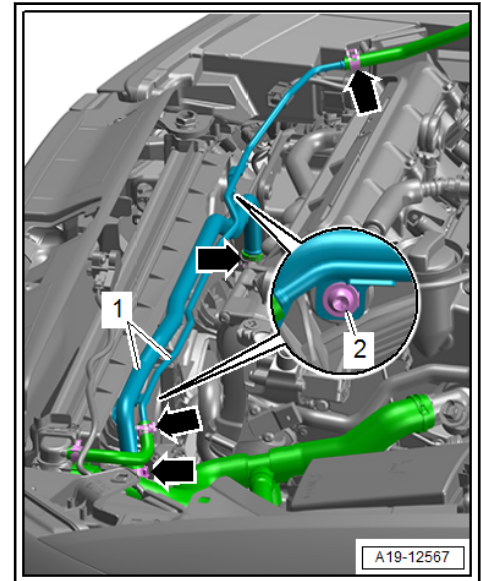
2.4 Electric Coolant Pump, Removing and Installing

Special tools and workshop equipment required

- ◆ Hose Clip Pliers -VAS6362-

Removing

- Drain the coolant. Refer to ⇒ [D1.3 Draining and Filling", page 54](#).
- Remove the bolts -2-.



- Loosen the hose clamps -arrows- and remove the coolant hoses.
- Remove the coolant pipes -1- from the fan shroud.

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Coolant Pump/Coolant Regulation; Electric Coolant Pump, Removing and Installing.

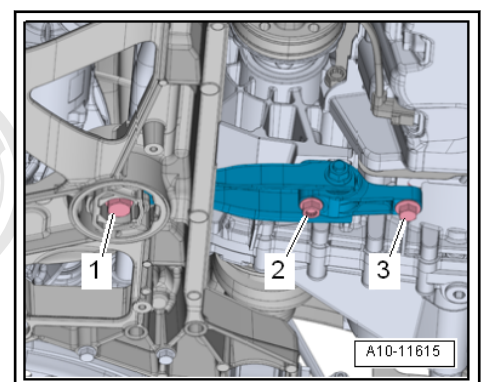
Tightening Specifications

- ◆ Refer to ⇒ [-2.1 Air Filter Housing”, page 95](#)

2.5 Coolant Pump, Removing and Installing

Removing

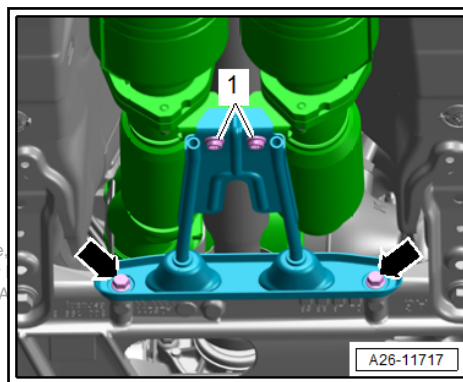
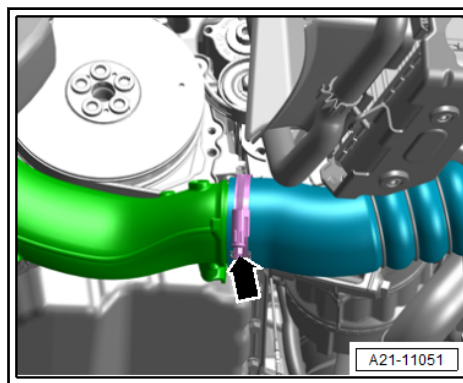
- Drain the coolant. Refer to ⇒ [D1.3 draining and Filling”, page 54](#).
- Remove the bolts -2 and 3- for the pendulum support.



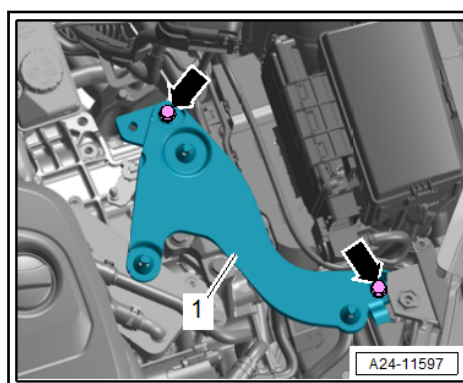
- Loosen the hose clamp -arrow- and remove the air duct hose.

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- Remove the bolts -arrows-.



- Support the engine in the installation position. Refer to [⇒ S2.2 upporting in Installation Position”, page 21](#) .
- Remove the engine mount. Refer to [⇒ M2.3 ount, Removing and Installing”, page 23](#) .
- Remove air filter housing. Refer to [⇒ F2.2 ilter Housing, Removing and Installing”, page 96](#) .
- Free up the wiring harness on the bracket -1- for the air filter housing.



- Remove the bolts -arrows- and remove the bracket for the air filter housing.
- Remove the bolts -arrows- for the transmission mount -1-.



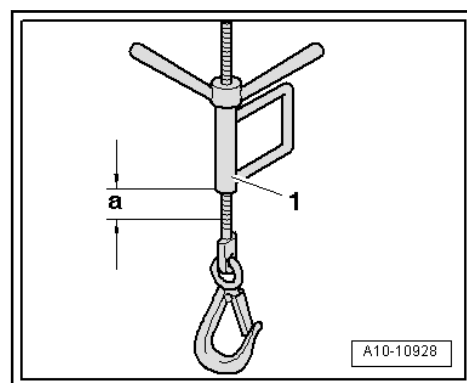
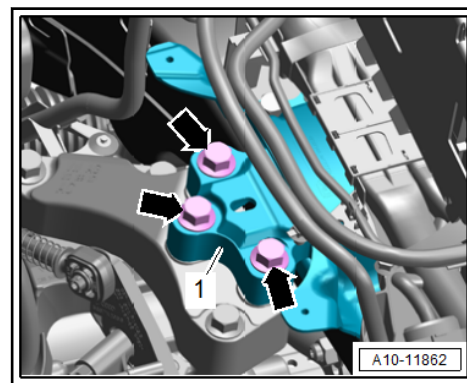
Audi

- Push the engine/transmission assembly slightly to the left side.

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- Lift the engine with the right spindle 1 to dimension -a-

erWin



- Dimension -a- = 55 mm

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Coolant Pump/Coolant Regulation; Coolant Pump, Removing and Installing.

Installing

Additional procedures:

- Secure all hose connections with hose clamps that match the ones used in series production. Refer to the Parts Catalog.
- Install the engine mount. Refer to ⇒ [M2.3 ount, Removing and Installing](#), page 23 .
- Install the air filter housing. Refer to ⇒ [F2.2 ilter Housing, Removing and Installing](#), page 96 .

Tightening Specifications

- ◆ Refer to ⇒ [Fig. “Pendulum Support - Tightening Specifications and Sequence”](#), page 21
- ◆ Refer to ⇒ [-2.1 Air Filter Housing](#), page 95
- ◆ Refer to ⇒ [-2.1 Subframe Mount](#), page 19
- ◆ Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Charge Air System; Overview - Charge Air Hose Connection.
- ◆ Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 26; Emissions Control System; Overview - Emissions Control System.

2.6 Coolant Thermostat, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 19; Coolant Pump/Coolant Regulation; Coolant Thermostat,
Removing and Installing.

2.7 Coolant Distribution Housing, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 19; Coolant Pump/Coolant Regulation; Coolant Distribution
Housing, Removing and Installing.

2.8 Engine Coolant Temperature Sensor - G62-, Removing and Installing

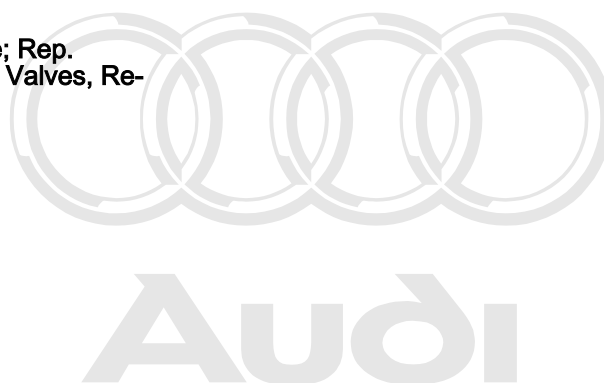
Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 19; Coolant Pump/Coolant Regulation; Engine Coolant
Temperature Sensor -G62-, Removing and Installing.

2.9 Engine Temperature Control Temperature Sensor -G694-, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 19; Coolant Pump/Coolant Regulation; Engine Temperature
Control Sensor -G694-, Removing and Installing.

2.10 Coolant Valves, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 19; Coolant Pump/Coolant Regulation; Coolant Valves, Re-
moving and Installing.



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3 Coolant Pipes

⇒ -3.1 Coolant Pipes", page 65

⇒ P3.2 ipes, Removing and Installing", page 65

3.1 Overview - Coolant Pipes

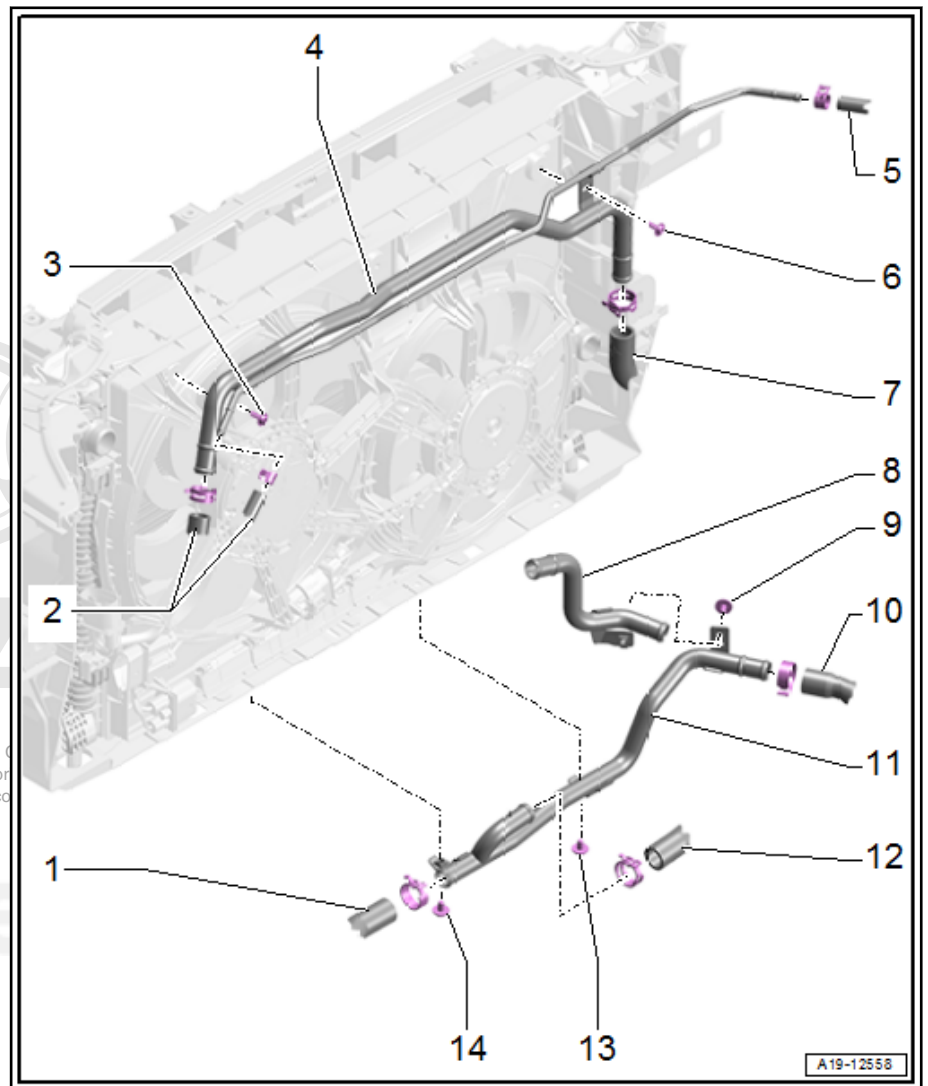
Engine-Side Coolant Pipes

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Coolant Pipes; Overview - Coolant Pipes.

Body Side Coolant Pipes

- 1 - Coolant Hose
- 2 - Coolant Hoses
- 3 - Bolt
 - 6 Nm
- 4 - Coolant Pipes on the Fan Shroud
- 5 - Coolant Hose
- 6 - Bolt
 - 6 Nm
- 7 - Coolant Hose
- 8 - Coolant Pipe
- 9 - Bolt
 - 8 Nm
- 10 - Coolant Hose
- 11 - Coolant Pipe to Lock Carrier
- 12 - Coolant Hose
- 13 - Bolt
 - 8 Nm
- 14 - Bolt
 - 8 Nm

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3.2 Coolant Pipes, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Coolant Pipes; Coolant Pipes, Removing and Installing.



4 Radiator/Radiator Fan

⇒ [4.1 Radiator/Radiator Fan", page 66](#)

⇒ [4.2 Auxiliary Radiator", page 69](#)

⇒ [R4.3 Removing and Installing", page 70](#)

⇒ [S4.4 Houd, Removing and Installing", page 74](#)

⇒ [R4.5 Radiator Fan V7, Removing and Installing", page 76](#)

⇒ [R4.6 Radiator, Removing and Installing", page 77](#)

4.1 Overview - Radiator/Radiator Fan

Radiator



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1 - Air Duct

2 - Radiator

- ☐ Removing and installing. Refer to ⇒ [R4.3 removing and Installing", page 70](#) .
- ☐ Change the coolant after replacing

3 - Coolant Hose

- ☐ Lift the clamp to remove
- ☐ Connecting. Refer to ⇒ [Fig. "Connect the Coolant Hose to the Connector Coupling on the Radiator.", page 67](#) .

4 - O-Ring

- ☐ Always replace after removing.
- ☐ Coat with coolant

5 - Coolant Hose

6 - Air Duct

7 - Air Duct

8 - Condenser

- ☐ Removing and installing. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87; Refrigerant Circuit; Condenser, Removing and Installing.

9 - Air Duct

10 - Bolt

- ☐ 5 Nm

11 - Radiator Mount

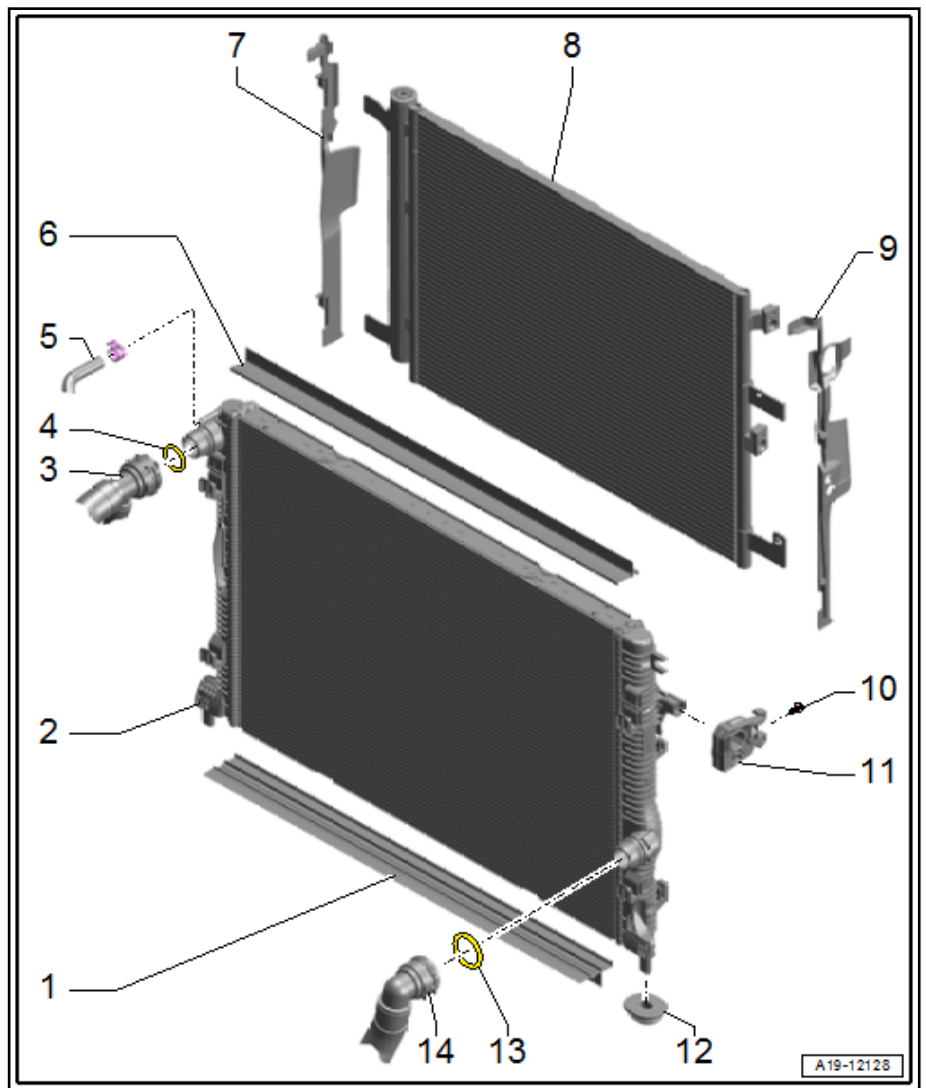
12 - Radiator Mount

13 - O-Ring

- ☐ Always replace after removing.
- ☐ Coat with coolant

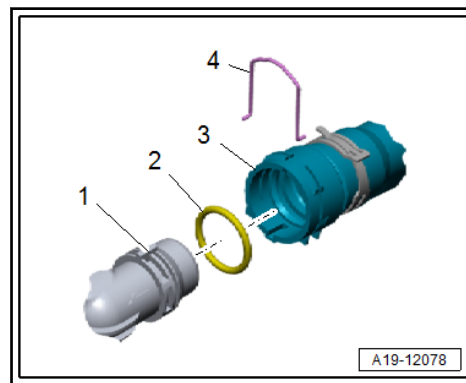
14 - Coolant Hose

- ☐ Lift the clamp to remove
- ☐ Connecting. Refer to ⇒ [Fig. "Connect the Coolant Hose to the Connector Coupling on the Radiator.", page 67](#) .



Connect the Coolant Hose to the Connector Coupling on the Radiator.

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- Replace the damaged clip -4-.
- Remove the old O-ring -2- in the coolant hose -3-.
- Coat the new O-ring with coolant and insert it in the coolant hose.
- Press the coolant hose onto the radiator -1- until it engages audibly.
- Press the coolant hose on again and pull to make sure the connector coupling is engaged correctly.

Fan Shroud and Radiator Fan



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1 - Bolt

- ☐ 5 Nm

2 - Fan Shroud

- ☐ Removing and installing. Refer to [S4.4 hroud, Removing and Installing", page 74](#) .

3 - Bolt

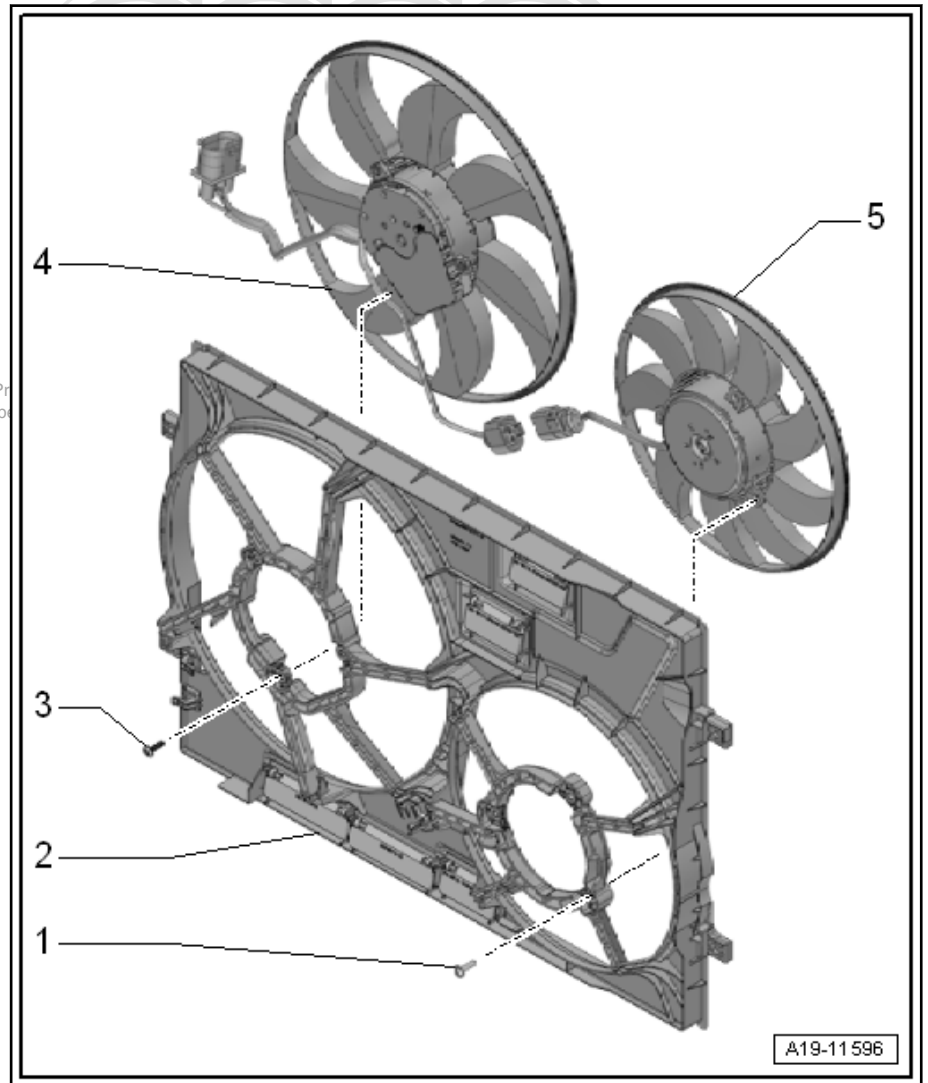
- ☐ 5 Nm

4 - Radiator Fan -V7-

- ☐ Removing and installing. Refer to [R4.5 radiator Fan V7, Removing and Installing", page 76](#) .

5 - Radiator Fan 2 -V177-

- ☐ Removing and installing. Refer to [R4.5 radiator Fan V7, Removing and Installing", page 76](#) .



4.2 Overview - Auxiliary Radiator

- 1 - Air Duct
- 2 - Bracket
 - For auxiliary radiator

- 3 - Nuts
 - 9 Nm

- 4 - Grille
- 5 - Grommets

- 6 - Nut
 - 9 Nm

- 7 - Coolant Hose

- 8 - Bracket

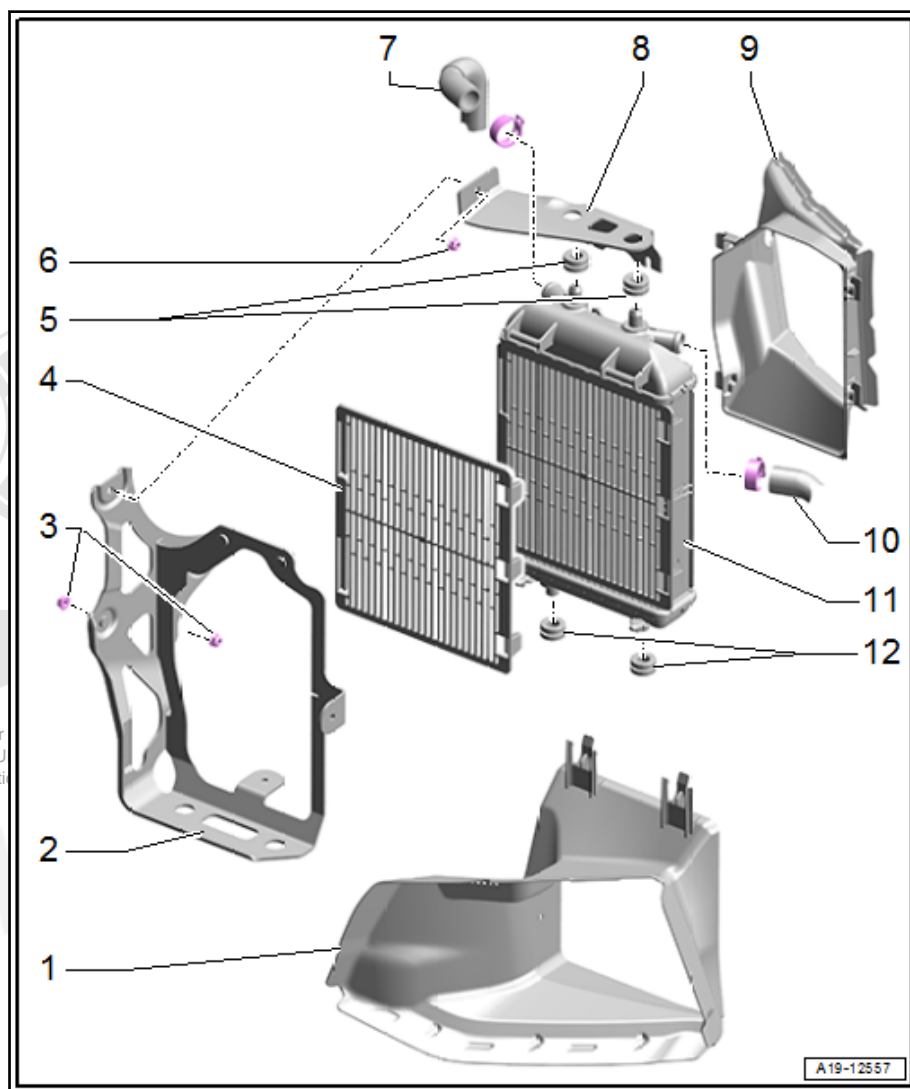
- 9 - Air Duct

- 10 - Coolant Hose

- 11 - Auxiliary Cooler
 - The left side is shown
 - Removing and installing. Refer to ⇒

R4.6 adiutor, Removing and Installing, page 77

- 12 - Radiator Mount



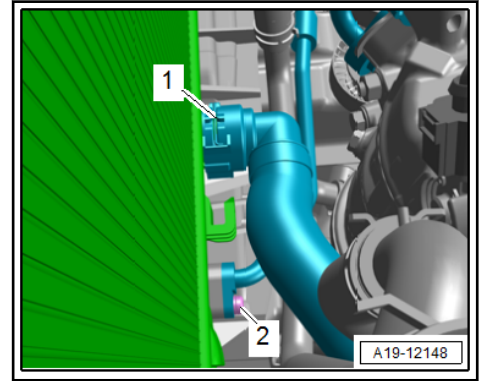
4.3 Radiator, Removing and Installing

Special tools and workshop equipment required

- ◆ Coolant Collection System -VAS5014- or Shop Crane - Drip Tray -VAS6208-
- ◆ Hose Clip Pliers -VAS6362-

Removing

- Remove the air filter housing. Refer to ⇒ [F2.2 ilter Housing, Removing and Installing](#), page 96 .
- Remove the fan shroud. Refer to ⇒ [S4.4 hroud, Removing and Installing](#), page 74 .
- Drain the refrigerant circuit. Refer to ⇒ Refrigerant R1234yf Servicing; Rep. Gr. 87; Working with the A/C Service Station; Refrigerant Circuit, Discharging.
- Remove the front bumper cover. Refer to ⇒ Body Exterior; Rep. Gr. 63; Front Bumper; Bumper Cover, Removing and Installing.
- Place the container of the -VAS5014- or the -VAS6208- underneath.



- Lift the clamp -1-, remove the lower right coolant hose from the radiator and allow the coolant to drain.

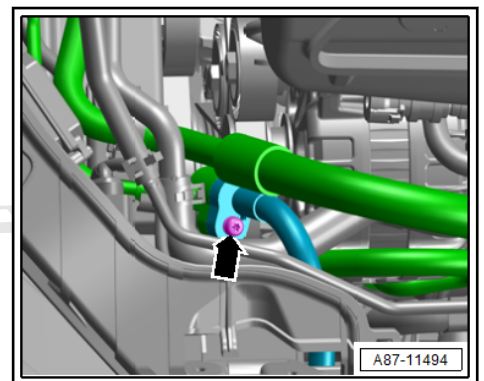
! WARNING

Danger or frostbite due to refrigerant coming out under pressure.

Frostbite on the skin and other parts of the body is possible.

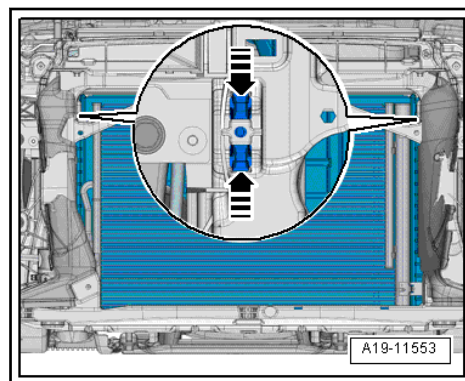
- Wear safety gloves.
- Wear protective eyewear.
- Evacuate or drain refrigerant and open the refrigerant circuit immediately.
- If more than 10 minutes elapse after extracting or draining the refrigerant and the refrigerant circuit has not been opened, extract or drain the refrigerant again. Pressure develops in the refrigerant circuit due to evaporation.

- Remove the bolt -2- and remove the hose/line assembly for the refrigerant.
- Remove the bolt -arrow- and remove the hose/line assembly for the refrigerant.



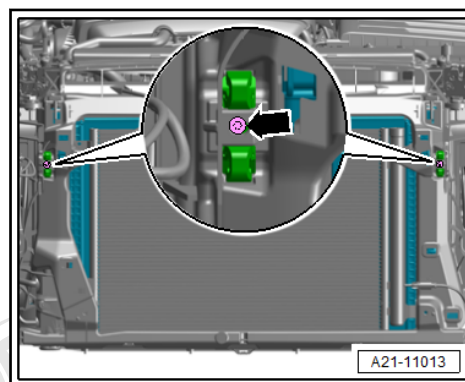
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Radiator Mount With Catch:



- Disconnect the left and right radiator mount catches -arrows- with a side cutter. Push the top of the coolant radiator slightly toward the rear.

Radiator Mount With Threaded Connection:

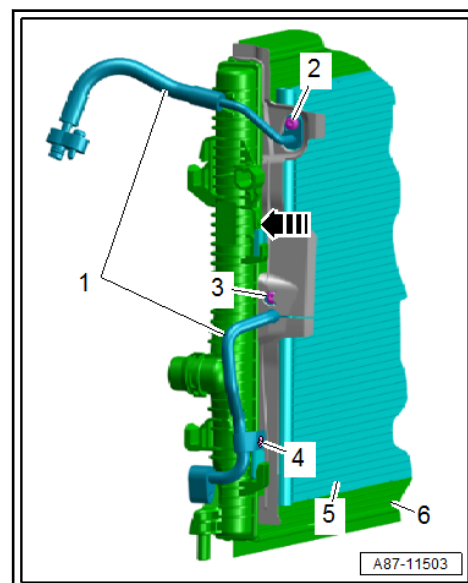


- Remove the bolt -arrow- on the left and right. Push the top of the coolant radiator slightly toward the rear.

Continuation:

- Remove the radiator upward from the lock carrier and remove the left and right radiator mount.
- Remove the coolant radiator with the condenser upward.
- Remove the bolts -2, 3 and 4- and remove the refrigerant line and hose/line assembly -1- for the refrigerant.

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- Release the left and right catches -arrow- and remove the condenser -5- from the radiator -6-.

Installing

Install in reverse order of removal and note the following:

- If there are small impressions on the slats. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 00; Repair Information; Radiator and Condenser Assembly.
- The radiator mount is reused with the separated catches. It is attached to the lock carrier. Refer to Parts Catalog for the correct bolts.
- Replace the O-rings after removing them.
- Secure all hose connections with hose clamps that match the ones used in series production. Refer to the Parts Catalog.
- Used coolant cannot be used again.
- Install the front bumper cover. Refer to ⇒ Body Exterior; Rep. Gr. 63; Front Bumper; Bumper Cover, Removing and Installing.
- Connect the coolant hose to the connector coupling. Refer to ⇒ [Fig. “Connect the Coolant Hose to the Connector Coupling on the Radiator.”, page 67](#).
- Install the fan shroud. Refer to ⇒ [S4.4 hroud, Removing and Installing”, page 74](#).
- Install the air filter housing. Refer to ⇒ [F2.2 ilter Housing, Removing and Installing”, page 96](#).
- Fill the refrigerant circuit. Refer to ⇒ Refrigerant R1234yf Servicing; Rep. Gr. 87; Working with the A/C Service Station; Refrigerant Circuit, Filling.
- Fill with coolant. Refer to ⇒ [D1.3 raining and Filling”, page 54](#).

Tightening Specifications

- ◆ Refer to ⇒ [-4.1 Radiator/Radiator Fan”, page 66](#)
- ◆ Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87; Refrigerant Circuit; Overview - Condenser.

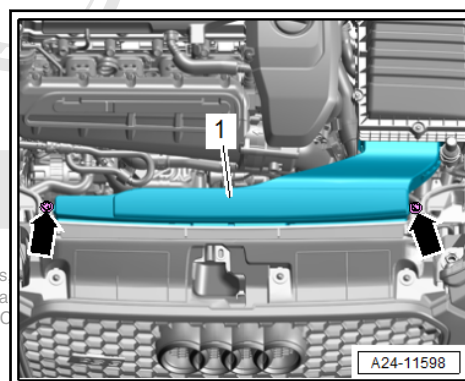
4.4 Fan Shroud, Removing and Installing

Special tools and workshop equipment required

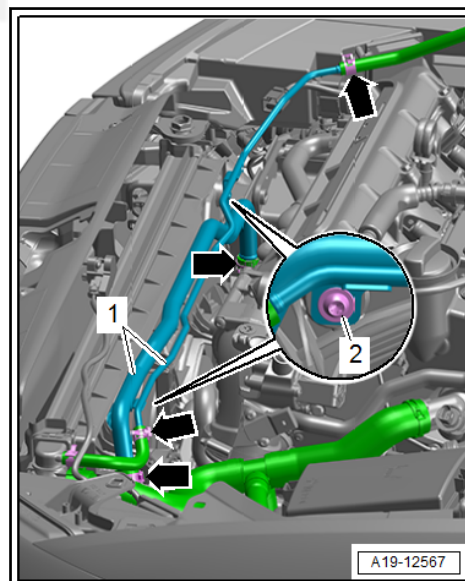
- ◆ Hose Clip Pliers -VAS6362-

Removing

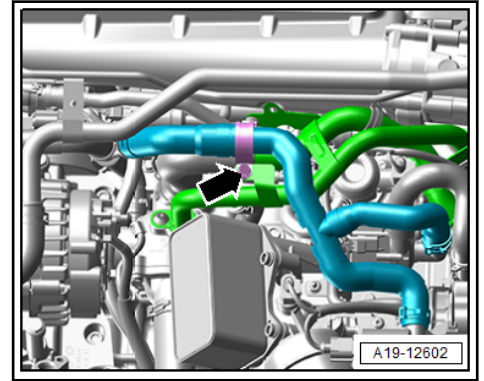
- Drain the coolant. Refer to [⇒ D1.3 draining and Filling", page 54](#).
- Remove the bolts -arrows- and air guide.



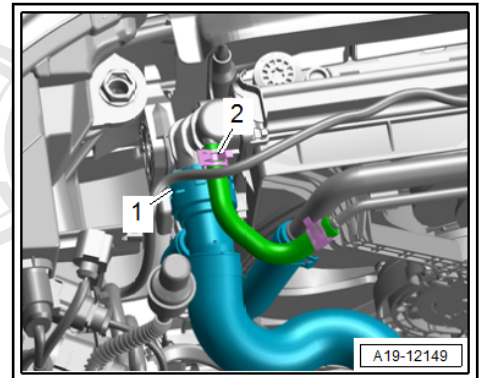
- Remove the bolts -2-.



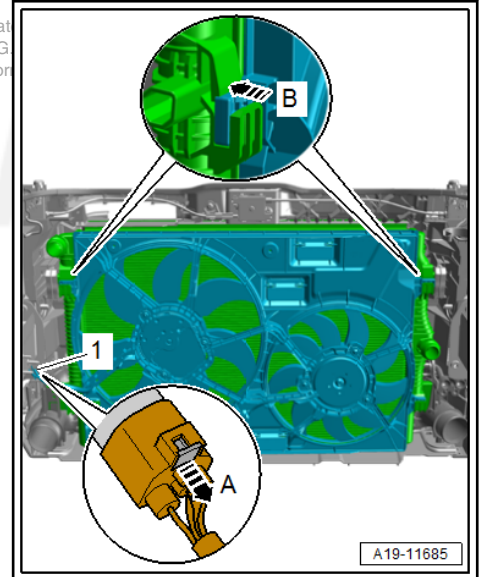
- Loosen the hose clamps -arrows- and remove the coolant hoses.
- Remove the coolant pipes -1- from the fan shroud.
- Remove the bolt -arrow- and push the coolant hose toward the rear.



- Pry up the clamp -1- and remove the left upper coolant hose from the radiator and push to the side.



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WARNING

There is a risk of injury if the radiator fan turns on by itself.

- Disconnect the connectors.
- Disconnect the connector -1- for the radiator fan, to do this push the clip in the direction of -arrow A- and push the retainer downward.
- Push the left and right locking latches for the fan shroud at the same time in direction of -arrow B- and remove the fan shroud upward from the radiator and remove it upward.

Installing

Install in reverse order of removal and note the following:

- Secure all hose connections with hose clamps that match the ones used in series production. Refer to the Parts Catalog.
- Used coolant cannot be used again.
- Connect the coolant hose to the connector coupling. Refer to [⇒ Fig. “Connect the Coolant Hose to the Connector Coupling on the Radiator.”, page 67](#).
- Fill with coolant. Refer to [⇒ D1.3 draining and Filling”, page 54](#).

Tightening Specifications

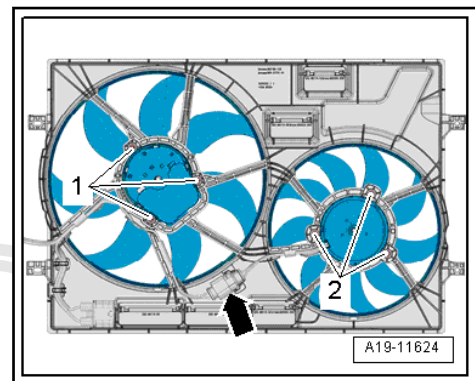
- ◆ Refer to [⇒ -4.1 Radiator/Radiator Fan”, page 66](#)
- ◆ Refer to [⇒ -3.1 Coolant Pipes”, page 65](#)
- ◆ Refer to [⇒ -2.1 Air Filter Housing”, page 95](#)

4.5 Radiator Fan - V7-, Removing and Installing

The Radiator Fan 2 -V177- is removed and installed in the same manner.

Removing

- During installation, all cable ties must be installed at the same location.
- Remove the fan shroud. Refer to [⇒ S4.4 hroud, Removing and Installing”, page 74](#).
- Disconnect the connector -arrow-.



- Remove the bolts and remove the radiator fan.

- 1 - For the Radiator Fan -V7-
- 2 - For the Radiator Fan 2 -V177-

Installing

Install in reverse order of removal and note the following:

- Install the fan shroud. Refer to [⇒ S4.4 hroud, Removing and Installing”, page 74](#).

Tightening Specifications

- ◆ Refer to [⇒ -4.1 Radiator/Radiator Fan”, page 66](#)

4.6 Auxiliary Radiator, Removing and Installing

Special tools and workshop equipment required

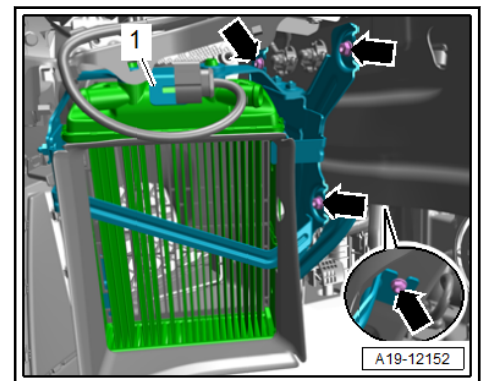
- ◆ Hose Clamps - Up To 25 mm -3094-
- ◆ Coolant Collection System -VAS5014- or Shop Crane - Drip Tray -VAS6208-
- ◆ Hose Clip Pliers -VAS6340-
- ◆ Hose Clip Pliers -VAS6362-

Removing

- Remove the front wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.
- Remove the front wheel spoiler as well as the wheel housing liner in the front area and push toward the rear. Refer to ⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing.

Left Auxiliary Radiator:

- Clamp off the coolant hoses on the radiator using the -3094-.
- Loosen the hose clamps and remove the coolant hoses from the radiator.
- Loosen nuts -arrows- a few turns.



- Free up the wiring harness.
- Remove the left auxiliary radiator -1- forward from the threaded pin and remove toward the rear.

Installing

Install in reverse order of removal and note the following:

- Secure all hose connections with hose clamps that match the ones used in series production. Refer to the Parts Catalog.
- Used coolant cannot be used again.
- Check the coolant. Refer to ⇒ [D1.3 draining and Filling](#), page 54.

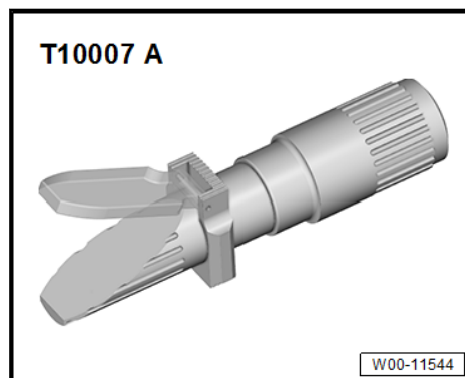
Tightening Specifications

- ◆ Refer to ⇒ [-4.2 Auxiliary Radiator](#), page 69
- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Overview - Front Wheel Housing Liner.
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44; Wheels, Tires.

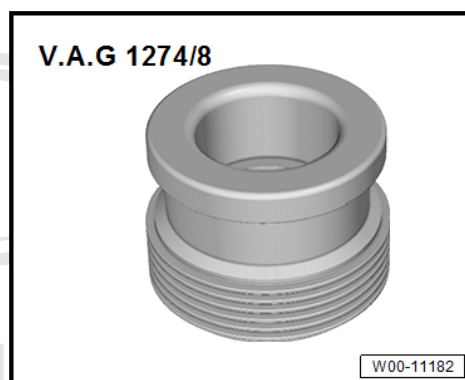
5 Special Tools

Special tools and workshop equipment required

- ◆ Refractometer -T10007A-

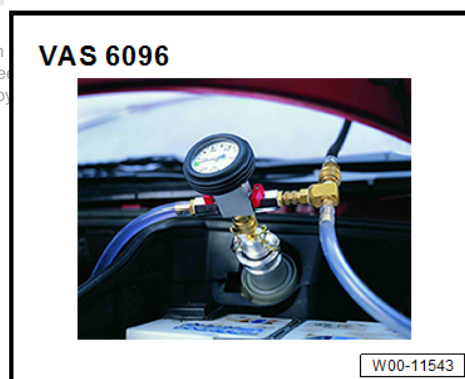


- ◆ Cooling System Tester - Adapter -VAG1274/8-



- ◆ Cooling System Charge Kit -VAS6096-

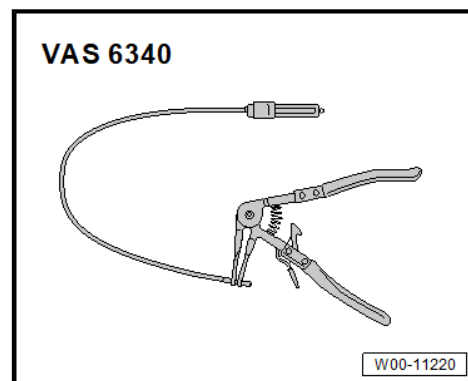
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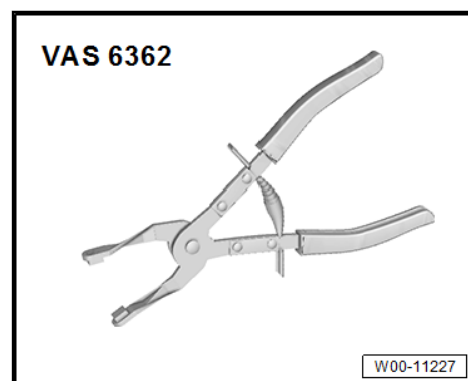
- ◆ Coolant Collection System -VAS5014- or Shop Crane - Drip Tray -VAS6208-



◆ Hose Clip Pliers -VAS6340-



◆ Hose Clip Pliers -VAS6362-



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21 – Turbocharger, Supercharger

1 Turbocharger

⇒ -1.1 Turbocharger", page 80

⇒ R1.2 emoving and Installing", page 80

⇒ T1.3 urbocharger Recirculating ValveN249, Removing and Installing", page 80

1.1 Overview - Turbocharger

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Turbocharger; Overview - Turbocharger.

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1.2 Turbocharger Removing and Installing

Removing

- Remove the front wheel spoiler. Refer to ⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing.

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Turbocharger; Turbocharger, Removing and Installing.

Tightening Specifications

- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Overview - Front Wheel Housing Liner.

1.3 Turbocharger Recirculating Valve - N249-, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Turbocharger; Turbocharger Recirculation Valve - N249- Removing and installing.

2 Charge Air System

⇒ [-2.1 Charge Air System", page 81](#)

⇒ [-2.2 Charge Air Hose Connections", page 84](#)

⇒ [A2.3 Air Cooler, Removing and Installing", page 84](#)

⇒ [C2.4 Charge Air Pressure Sensor G31, Removing and Installing", page 85](#)

⇒ [A2.5 Air System, Checking for Leaks", page 85](#)

2.1 Overview - Charge Air System

- Before testing or performing a repair, check all air guide pipes and hoses and all vacuum lines for leaks and secure seating.



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1 - Bolt

- 10 Nm

2 - Retaining Bracket
3 - Rubber Bushing
4 - Charge Air Cooler

- Removing and installing. Refer to ⇒ [A2.3 in Cooler, Removing and Installing", page 84](#) .

5 - Air Duct Hose

- Installation position. Refer to ⇒ [Fig. "Air Duct Hoses on Air Duct - Installation Position and Tightening Specification", page 83](#) .

6 - Bolt

- 8 Nm

7 - Air Duct

- Installation position. Refer to ⇒ [Fig. "Right Air Duct Hose on Turbocharger - Installation Position and Tightening Specification", page 83](#) .

8 - Air Duct Hose

- Installation position. Refer to ⇒ [Fig. "Right Air Duct Hose on Turbocharger - Installation Position and Tightening Specification", page 83](#) .

9 - Bolt

- 20 Nm

10 - Bracket
11 - Bolt

- 5 Nm

12 - Air Duct Hose

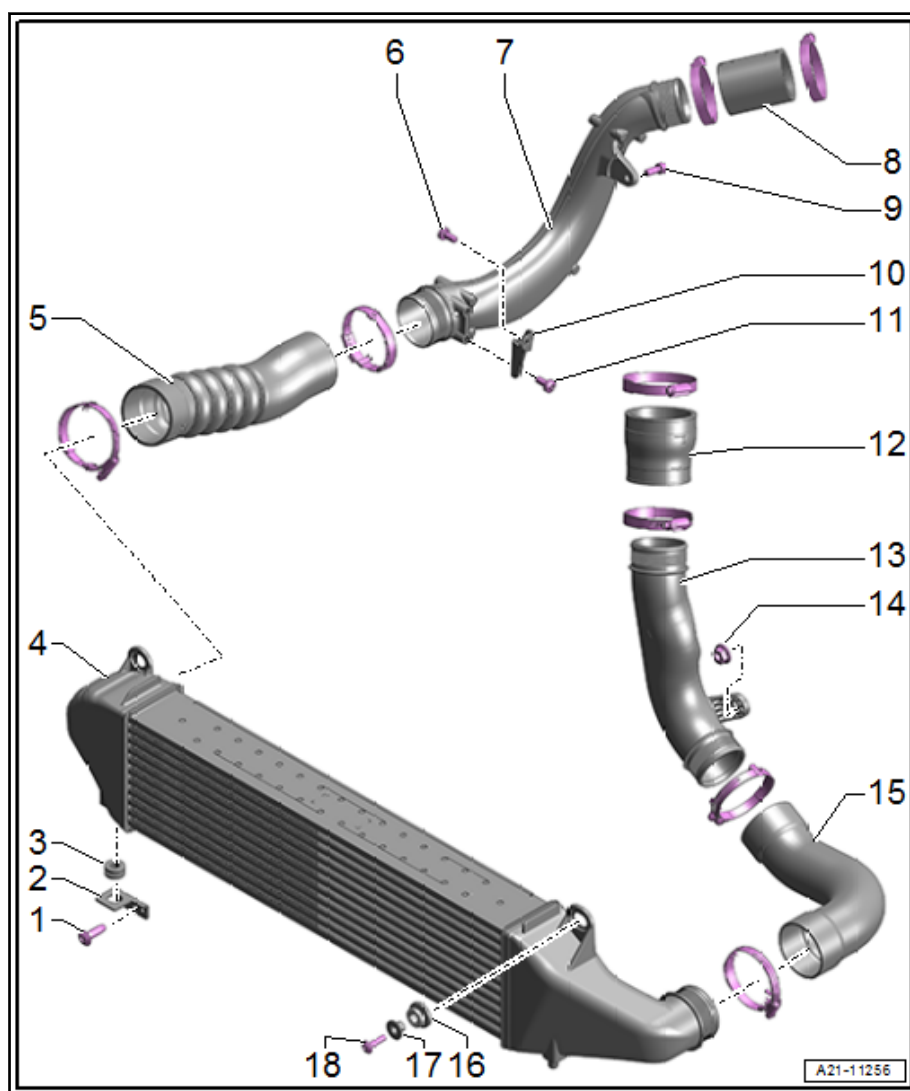
- Installation position. Refer to ⇒ [Fig. "Left Air Duct Hose on Intake Tube - Installation Position and Tightening Specification", page 83](#) .

13 - Air Duct

- Installation position. Refer to ⇒ [Fig. "Left Air Duct Hose on Intake Tube - Installation Position and Tightening Specification", page 83](#) .

14 - Nut

- 8 Nm

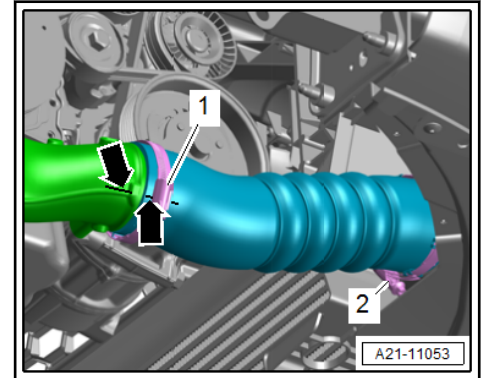
15 - Air Duct Hose
16 - Grommet
17 - Spacer Sleeve
18 - Bolt


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AG.

□ 5 Nm

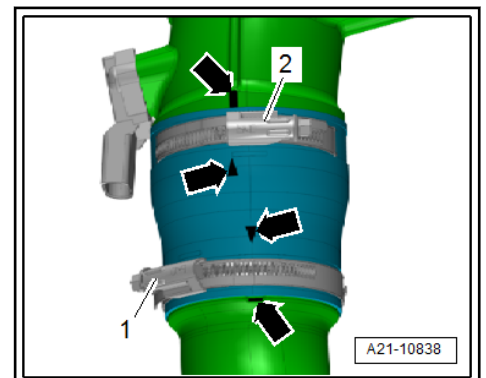
Air Duct Hoses on Air Duct - Installation Position and Tightening Specification

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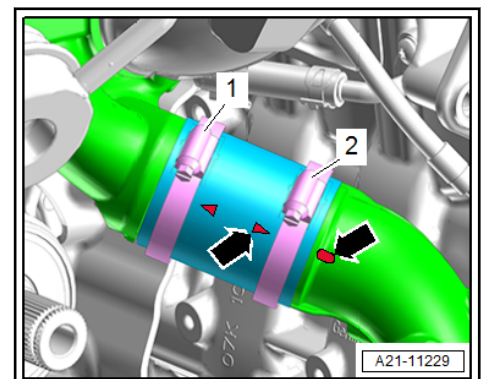
- The marks -arrows- must be positioned opposite each other.
- The locking bolts from the previously installed hose clamp -1 and 2- must be in the shown positions.
- Tighten the hose clamps to 5.5 Nm.

Left Air Duct Hose on Intake Tube - Installation Position and Tightening Specification



- The markings on the hose must align with the housing edge or the notch on the air duct pipe -arrows-.
- The locking bolts from the previously installed hose clamp -1 and 2- must be in the shown positions.
- Tighten the hose clamps to 5.5 Nm.

Right Air Duct Hose on Turbocharger - Installation Position and Tightening Specification



- The marks -arrows- must be positioned opposite each other.
- The locking bolts from the previously installed hose clamp -1 and 2- must be in the shown positions.
- Tighten the hose clamps to 5.5 Nm.

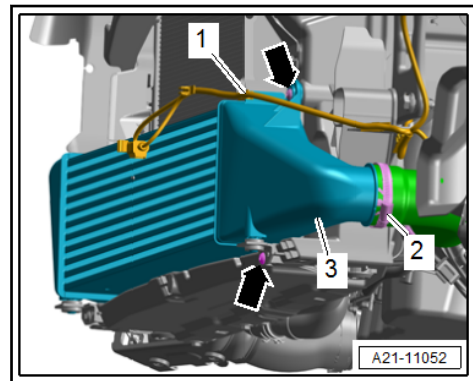
2.2 Overview - Charge Air Hose Connections

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Charge Air System; Overview - Charge Air Hose Connection.

2.3 Charge Air Cooler, Removing and Installing

Removing

- Remove the front bumper cover. Refer to ⇒ Body Exterior; Rep. Gr. 63; Front Bumper; Bumper Cover, Removing and Installing.
- Equipped on some models: remove the Distance Regulation Control Module -J428-. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Adaptive Cruise Control (ACC); Adaptive Cruise Control (ACC) Control Module, Removing and Installing.
- Pay attention to the guidelines for clean working conditions. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 00; Repair Information; Guidelines for Clean Working Conditions.
- Loosen the hose clamp -2- on the left and right sides and remove air duct hose.



- Remove the left and right bolts -arrows- and remove the charge air cooler -3-.

Installing

Install in reverse order of removal and note the following:

- If there are small impressions on the slats. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 00; Repair Information; Radiator and Condenser Assembly.
- Secure all hose connections with hose clamps that match the ones used in series production. Refer to the Parts Catalog.
- Install the Distance Regulation Control Module -J428-. Refer to ⇒ Electrical Equipment; Rep. Gr. 27; Adaptive Cruise Control (ACC); Adaptive Cruise Control (ACC) Control Module, Removing and Installing.

- Install the front bumper cover. Refer to ⇒ Body Exterior; Rep. Gr. 63; Front Bumper; Bumper Cover, Removing and Installing.

Tightening Specifications

- ◆ Refer to ⇒ [-2.1 Charge Air System”, page 81](#)
- ◆ Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Charge Air System; Overview - Charge Air Hose Connection.

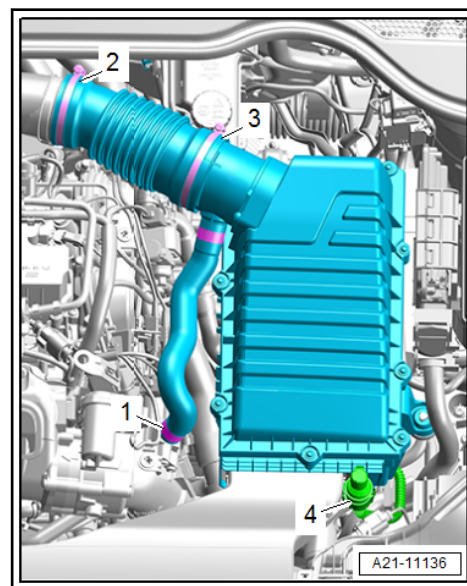
2.4 Charge Air Pressure Sensor -G31-, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Charge Air System; Charge Air Pressure Sensor -G31-, Removing and Installing.

2.5 Charge Air System, Checking for Leaks

Procedure

- Remove the engine cover. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.
- Pay attention to the guidelines for clean working conditions. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 00; Repair Information; Guidelines for Clean Working Conditions.
- Loosen the hose clamps -3- and remove the air duct hose.



Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Charge Air System; Charge Air System, Checking for Leaks.

Assembling

Assemble in the reverse order of removal. Note the following:

- Secure all hose connections with hose clamps that match the ones used in series production. Refer to the Parts Catalog.



- Install the engine cover. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.

Tightening Specifications

- ◆ Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Charge Air System; Overview - Charge Air Hose Connection.



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24 – Multiport Fuel Injection

1 Injection System

⇒ [L1.1 ocation Overview - Injection System", page 87](#)

1.1 Component Location Overview - Injection System

1 - Accelerator Pedal Position Sensor -G79- / Accelerator Pedal Position Sensor 2 -G185-

- Component location. Refer to ⇒ [Fig. "Accelerator Pedal Position Sensor -G79- / Accelerator Pedal Position Sensor 2 -G185- Component Location", page 87](#).

2 - Brake Booster Pressure Sensor -G294-

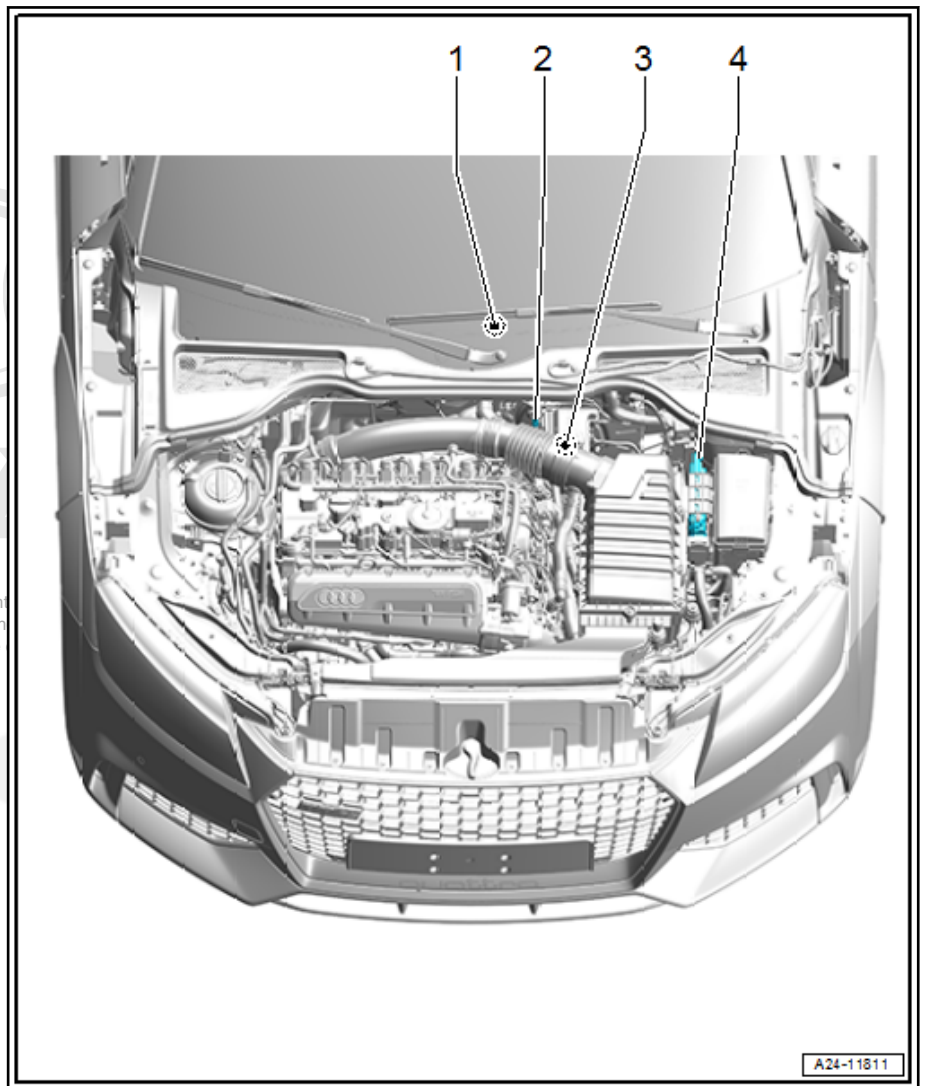
- Component location. Refer to ⇒ [Fig. "Brake Booster Pressure Sensor -G294- Component Location", page 88](#).

3 - Brake Lamp Switch -F- / Brake Pedal Switch -F63-

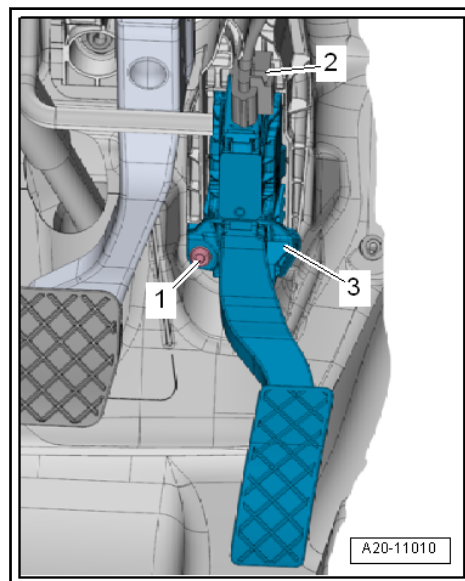
- Component location. Refer to ⇒ [Fig. "Brake Lamp Switch -F- / Brake Pedal Switch -F63- Component Location", page 88](#).

4 - Engine Control Module - J623-

- Removing and installing. Refer to ⇒ [E8.1 Engine Control Module J623, Removing and Installing", page 103](#).



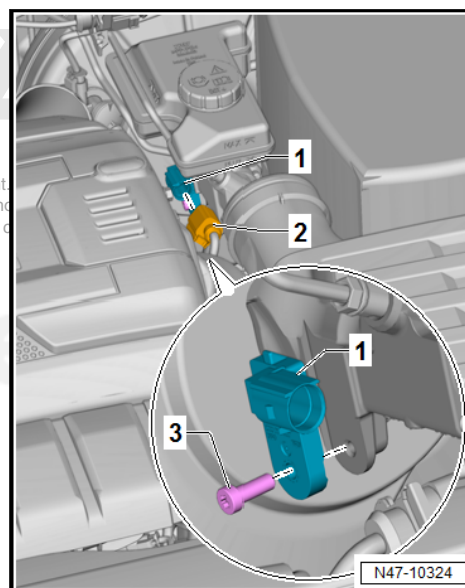
Accelerator Pedal Position Sensor -G79- / Accelerator Pedal Position Sensor 2 -G185- Component Location



- ◆ Integrated in the accelerator pedal module -3-. Faulty accelerator pedal position sensors cannot be replaced separately.

Overview. Refer to ⇒ Fuel Supply System; Rep. Gr. 20; Accelerator Pedal Mechanism; Overview - Accelerator Pedal Module.

Brake Lamp Switch -F- / Brake Pedal Switch -F63- Component Location

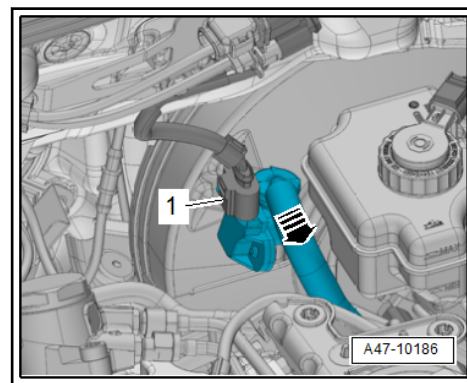


- ◆ In the engine compartment on the brake master cylinder.

1 - Brake Lamp Switch -F- / Brake Pedal Switch -F63-

Overview. Refer to ⇒ Brake System; Rep. Gr. 47; Brake Booster/Brake Master Cylinder; Overview - Brake Booster/Brake Master Cylinder.

Brake Booster Pressure Sensor -G294- Component Location



◆ On the brake booster

1 - Brake Booster Pressure Sensor -G294- Connector

Component Location Overview - Engine Intake Side



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1 - Oil Level Thermal Sensor -G266-

- ❑ Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 17; Oil Pan/Oil Pump; Overview - Oil Pan/Oil Pump.

2 - Cylinder 4 Fuel Injector - N33- FSI

- ❑ Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Fuel Injectors; Overview - Fuel Rail with Fuel Injectors.

3 - Engine Temperature Control Sensor -G694-

- ❑ Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Coolant Pump/Coolant Regulation; Overview - Engine Coolant Temperature Sensor.

4 - Cylinder 3 Fuel Injector - N32- FSI

- ❑ Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Fuel Injectors; Overview - Fuel Rail with Fuel Injectors.

5 - Cylinder 2 Fuel Injector - N31- FSI

- ❑ Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Fuel Injectors; Overview - Fuel Rail with Fuel Injectors.

6 - Mechanical Coolant Pump Switch Valve -N649-
7 - Cylinder 1 Fuel Injector -N30- FSI

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Fuel Injectors; Overview - Fuel Rail with Fuel Injectors.

8 - Cylinder 1 Fuel Injector 2 -N532- MPI

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Fuel Injectors; Overview - Fuel Rail with Fuel Injectors.

9 - Intake Manifold Runner Control Valve -N316-
10 - Cylinder 2 Fuel Injector 2 -N533- MPI

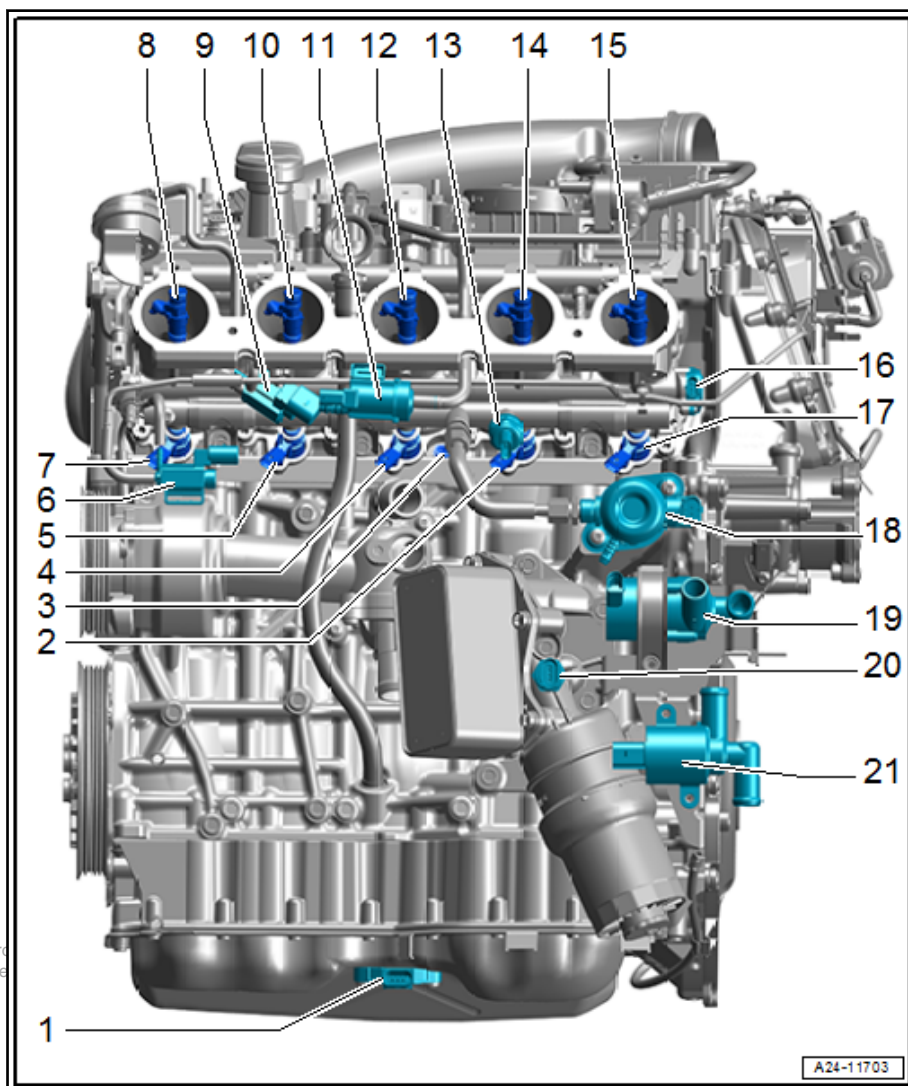
- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Fuel Injectors; Overview - Fuel Rail with Fuel Injectors.

11 - EVAP Canister Purge Regulator Valve 1 -N80-
12 - Cylinder 3 Fuel Injector 2 -N534- MPI

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Fuel Injectors; Overview - Fuel Rail with Fuel Injectors.

13 - Fuel Pressure Sensor -G247-

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Fuel Injectors; Overview - Fuel Rail with Fuel Injectors.



14 - Cylinder 4 Fuel Injector 2 -N535- MPI

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Fuel Injectors; Overview - Fuel Rail with Fuel Injectors.

15 - Cylinder 5 Fuel Injector 2 -N536- MPI

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Fuel Injectors; Overview - Fuel Rail with Fuel Injectors.

16 - Intake Manifold Runner Position Sensor -G336-

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Intake Manifold; Overview - Intake Manifold.

17 - Cylinder 5 Fuel Injector -N83- FSI

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Fuel Injectors; Overview - Fuel Rail with Fuel Injectors.

18 - Fuel Metering Valve -N290-

- ❑ Integrated in the high pressure pump

19 - After-Run Coolant Pump -V51-

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 19; Coolant Pump/Coolant Regulation; Overview - Electric Coolant Pump.

20 - Oil Pressure Sensor -G10-

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 17; Engine Oil Cooler; Overview - Engine Oil Cooler.

21 - Coolant Shut-Off Valve -N82-**Component Location Overview - Engine Exhaust Side**

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1 - Knock Sensor 2 -G66-

- Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine;
Rep. Gr. 28; Ignition
System; Overview - Ignition System.

2 - Knock Sensor 1 -G61-

- Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine;
Rep. Gr. 28; Ignition
System; Overview - Ignition System.

3 - Cylinder 5 Exhaust Cam Actuator -N611-

4 - Cylinder 4 Exhaust Cam Actuator -N603-

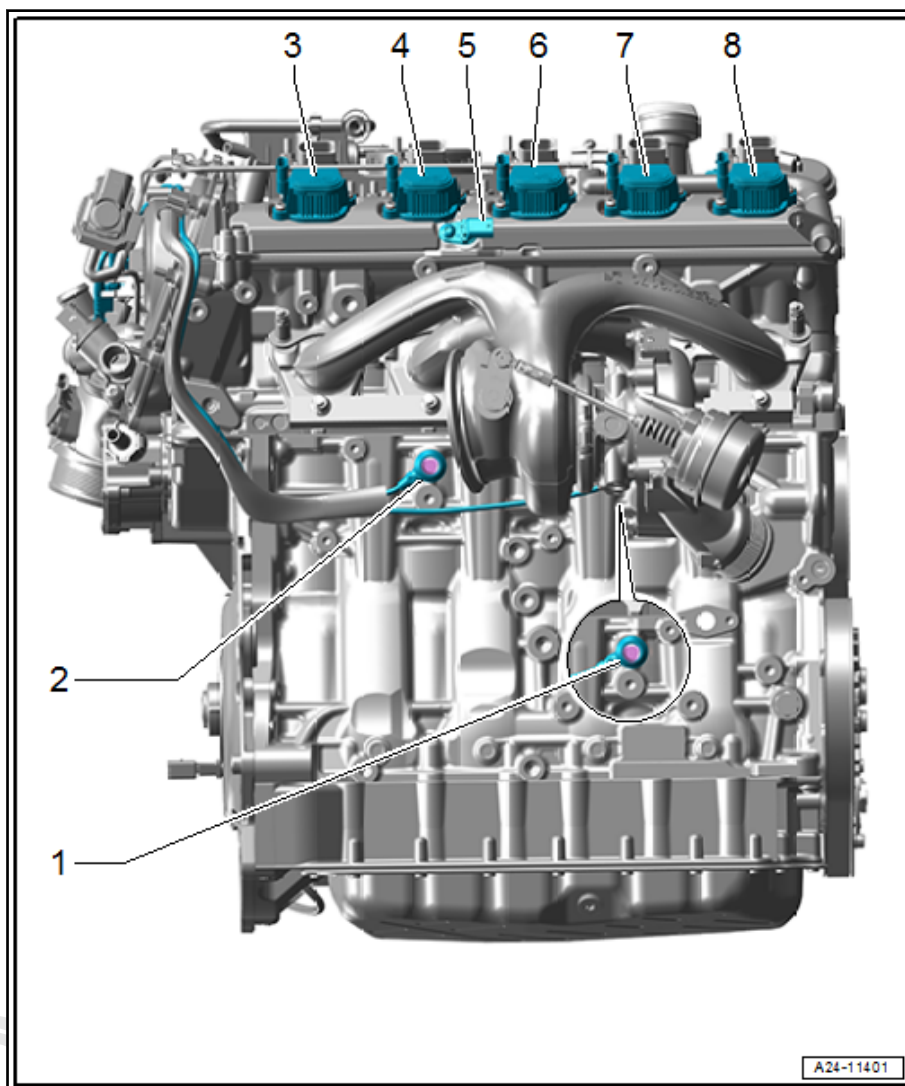
5 - Camshaft Position Sensor 3 -G300-

- Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine;
Rep. Gr. 28; Ignition
System; Overview - Ignition System.

6 - Cylinder 3 Exhaust Cam Actuator -N595-

7 - Cylinder 2 Exhaust Cam Actuator -N587-

8 - Cylinder 1 Exhaust Cam Actuator -N579-



Component Location Overview - Top of Engine

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1 - Camshaft Position Sensor -G40-

- Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 28; Ignition System; Overview - Ignition System.

2 - Ignition Coil 1 With Power Output Stage -N70-

- Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 28; Ignition System; Overview - Ignition System.

3 - Ignition Coil 2 With Power Output Stage -N127-

- Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 28; Ignition System; Overview - Ignition System.

4 - Ignition Coil 3 With Power Output Stage -N291-

- Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 28; Ignition System; Overview - Ignition System.

5 - Ignition Coil 4 With Power Output Stage -N292-

- Overview. Refer to
⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 28; Ignition System; Overview - Ignition System.

6 - Ignition Coil 5 With Power Output Stage -N323-

- Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 28; Ignition System; Overview - Ignition System.

7 - Exhaust Camshaft Adjustment Valve 1 -N318-

- Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 15; Valvetrain; Overview - Valvetrain.

8 - Camshaft Adjustment Valve 1 -N205-

- Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 15; Valvetrain; Overview - Valvetrain.

9 - Wastegate Bypass Regulator Valve -N75-

10 - Manifold Absolute Pressure Sensor -G71-

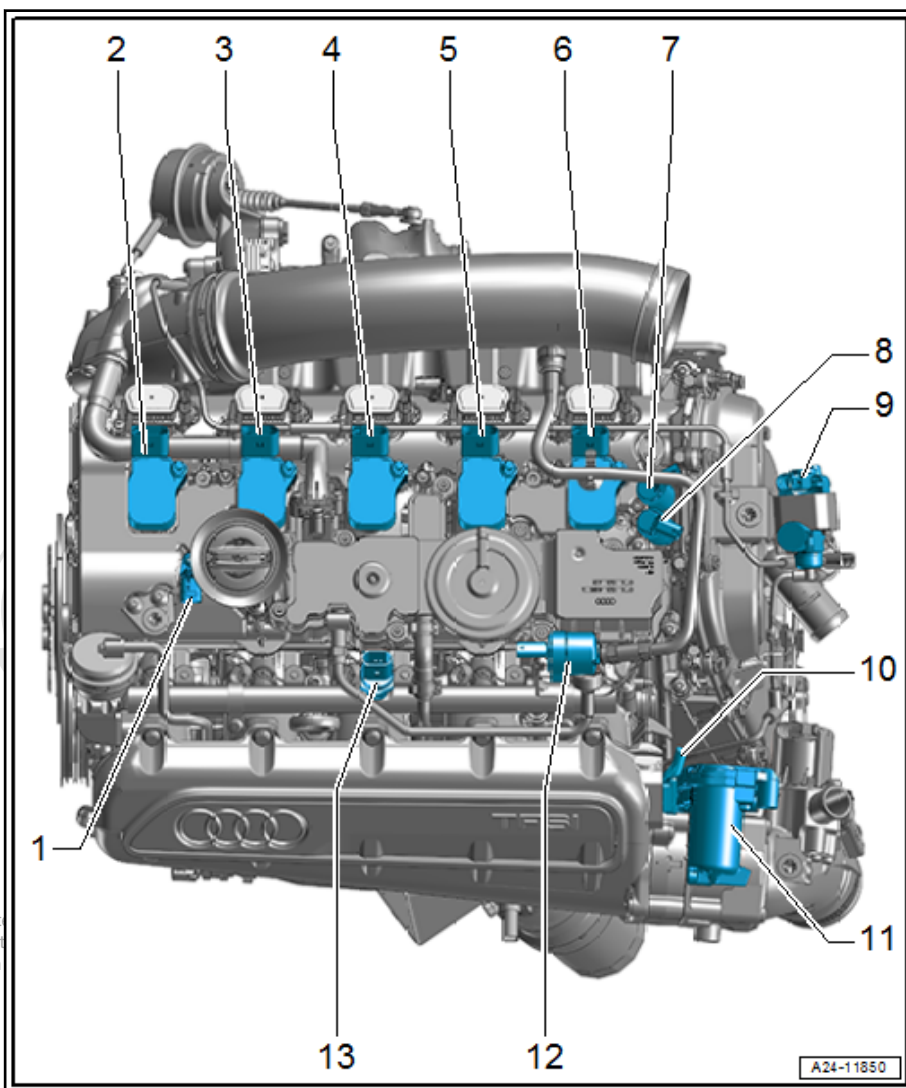
- Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Intake Manifold; Overview - Intake Manifold.

11 - Throttle Valve Control Module -J338-

- Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Intake Manifold; Overview - Intake Manifold.

12 - Crankcase Ventilation Valve -N546-

13 - Low Fuel Pressure Sensor -G410-





- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Fuel Injectors; Overview - Fuel Rail with Fuel Injectors.

Component Location Overview - Engine Transmission Side

1 - Engine Speed Sensor - G28-

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 28; Ignition System; Overview - Ignition System.

2 - Intermediate Shaft Speed Sensor -G265-

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 28; Ignition System; Overview - Ignition System.

3 - Charge Air Pressure Sensor -G31-

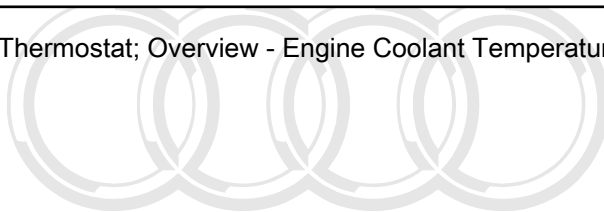
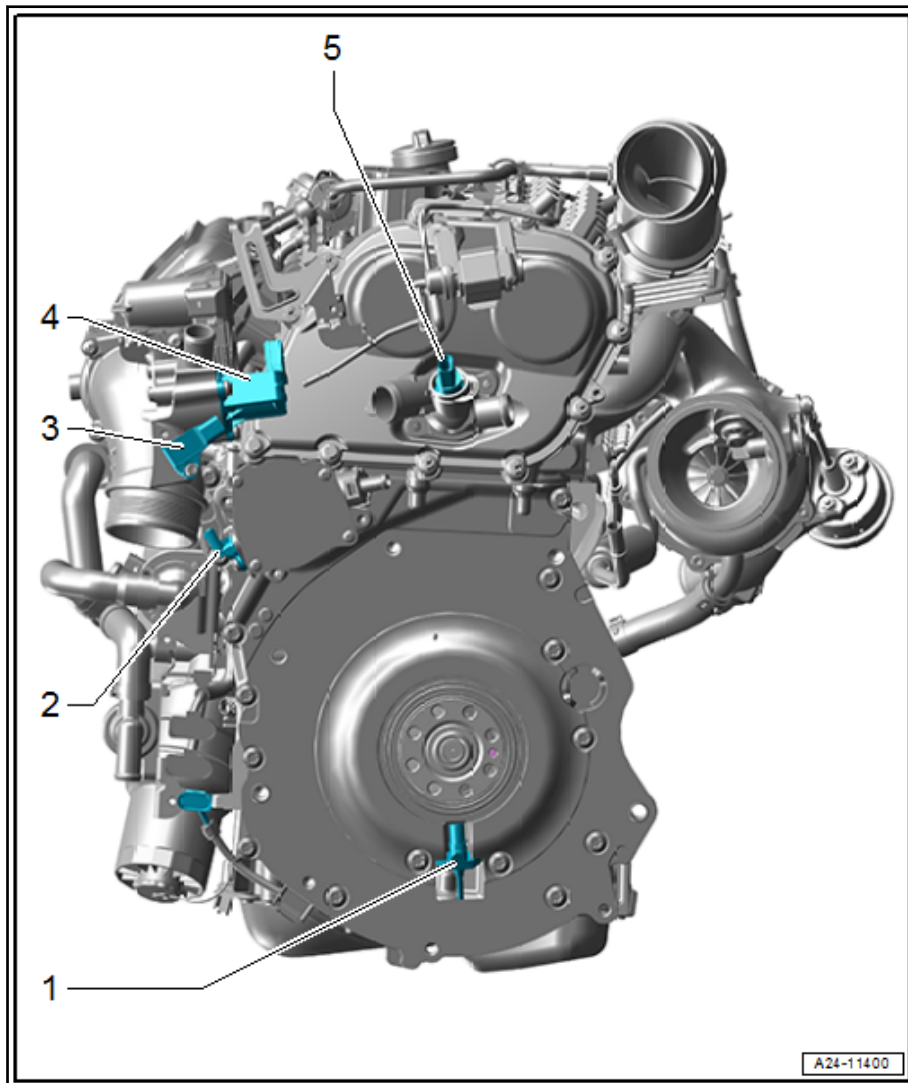
- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Intake Manifold; Overview - Intake Manifold.

4 - Turbocharger Recirculation Valve -N249-

- ❑ Overview. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Intake Manifold; Overview - Intake Manifold.

5 - Engine Coolant Temperature Sensor -G62-

- ❑ Overview. Refer to ⇒ Servicing – 4-Cylinder 2.0L 4V TFSI Engine; Rep. Gr. 19; Coolant Pump/Coolant Thermostat; Overview - Engine Coolant Temperature Sensor.



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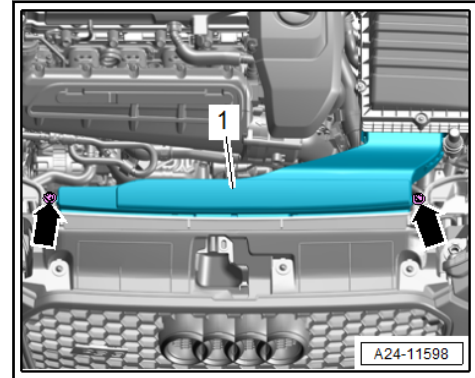
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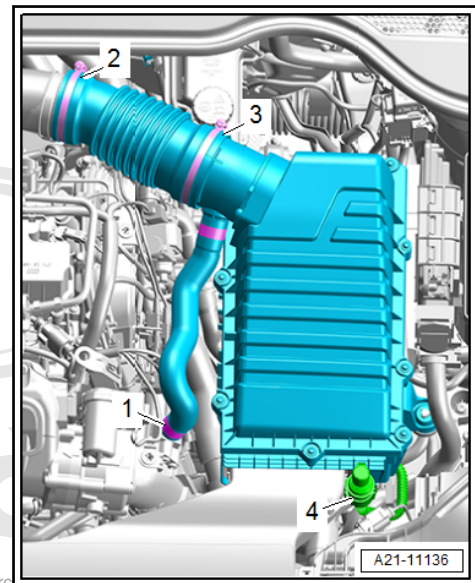
2.2 Air Filter Housing, Removing and Installing

Removing

- Remove the engine cover. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.
- Remove the bolts -arrows- and air duct -1-.



- Free up the transmission ventilation hose -4-.



- Loosen the clamps -1 and 2- and remove the air duct hose.
- Remove the air filter housing upward from the retaining pin.

Installing

Install in reverse order of removal and note the following:

- The air filter housing must always be clean.
- Use a silicone-free lubricant for installing the air duct hose.
- Secure all hose connections with hose clamps that match the ones used in series production. Refer to the Parts Catalog.
- Check the water drain in the air filter lower section for dirt and adhesive and clean if necessary.
- Check the air duct from the lock carrier to the air filter housing for dirt.

- Install the engine cover. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 10; Engine Cover; Engine Cover, Removing and Installing.

Tightening Specifications

- ◆ Refer to ⇒ [-2.1 Air Filter Housing", page 95](#)



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3 Intake Manifold

⇒ [-3.1 Intake Manifold”, page 98](#)

⇒ [M3.2 anifold Upper Section, Removing and Installing”, page 98](#)

⇒ [M3.3 anifold Lower Section, Removing and Installing”, page 98](#)

⇒ [T3.4 hrottle Valve Control ModuleJ338, Removing and Installing”, page 98](#)

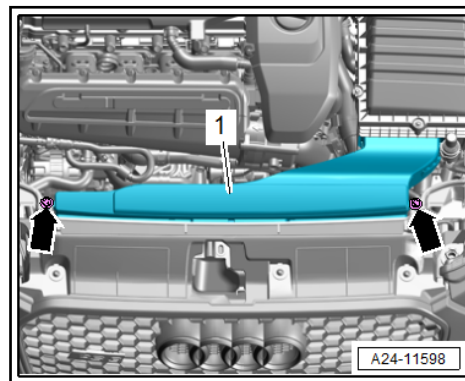
3.1 Overview - Intake Manifold

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Intake Manifold; Overview - Intake Manifold.

3.2 Intake Manifold Upper Section, Removing and Installing

Removing

- Remove the bolts -arrows- and the air duct -1-.



Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Turbocharger; Intake Manifold Upper Section, Removing and Installing.

Tightening Specifications

- ◆ Refer to ⇒ [-2.1 Air Filter Housing”, page 95](#) .

3.3 Intake Manifold Lower Section, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 21; Turbocharger; Intake Manifold Lower Section, Removing and Installing.

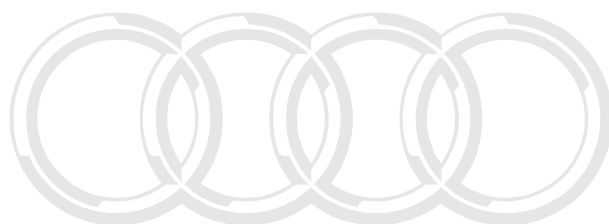
3.4 Throttle Valve Control Module -J338-, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 24; Intake Manifold; Throttle Valve Control Module -J338-, Removing and Installing.

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4 Fuel Injectors

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 24; Fuel Injectors.



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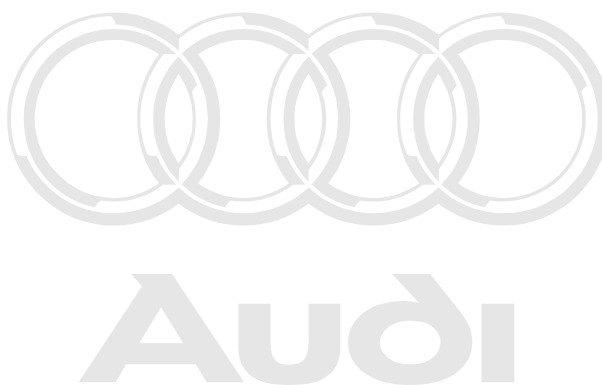
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5 Sensors

Refer to ⇒ Servicing – 4-Cylinder 1.8L; 2.0L 4V TFSI Engine;
Rep. Gr. 24; Sensors.



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6 High Pressure Pump

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 24; High Pressure Pump.

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7 Heated Oxygen Sensor

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 24; Heated Oxygen Sensor.

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8 Engine Control Module

⇒ E8.1 Engine Control Module J623, Removing and Installing", page 103

8.1 Engine Control Module -J623-, Removing and Installing

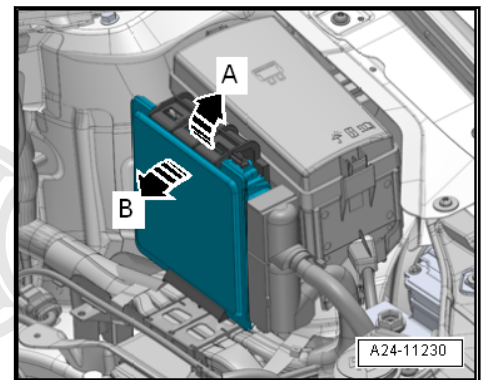
Special tools and workshop equipment required

- ◆ Vehicle Diagnostic Tester

Removing

If the Engine Control Module -J623- should be replaced an adaption value must be read out.

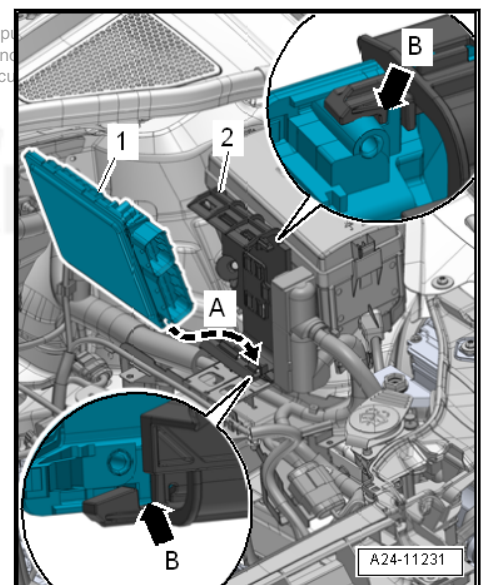
- Connect the Vehicle Diagnostic Tester switch on the ignition and select the function Replacing the Engine Control Module under Guided Functions.
- Switch off the ignition.
- Release the retainers in direction of -arrow A- and remove the Engine Control Module -J623- in direction of -arrow B-.



- Unlock and disconnect the connectors from the Engine Control Module -J623-.

Installing

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Install in reverse order of removal and note the following:



- Place the Engine Control Module -J623- -1- in the bracket -2- with the lower edge forward in direction of -arrow A- and locked on the upper edge.
- The ribs on the engine control module must be engaged in the upper and lower recesses on the bracket in direction of -B arrows-.

After installing a new engine control module:

- Activate the engine control module in Guided Functions mode under Replace Engine Control Module (ECM). Refer to Vehicle Diagnostic Tester.



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26 – Exhaust System, Emission Controls

1 Exhaust Pipes/Mufflers

⇒ [1.1 Muffler](#), page 105

⇒ [R1.2 removing and Installing](#), page 106

⇒ [S1.3 system, Installing without Tension](#), page 107

⇒ [S1.4 system, Checking for Leaks](#), page 108

1.1 Overview - Muffler

1 - Bolt

- ☐ 23 Nm

2 - Mount

- ☐ Always replace if damaged

3 - Retaining Loop

- ☐ Always replace if damaged

4 - Center and Rear Muffler

- ☐ Refer to ⇒ [S1.3 system, Installing without Tension](#), page 107.

5 - Mount

- ☐ Always replace if damaged

6 - Bolt

- ☐ 23 Nm

7 - Exhaust Door Control Unit

- ☐ Exhaust Door Control Unit -J883-/Exhaust Door Control Unit 2 - J945-
- ☐ Removing and Installing. Refer to ⇒ [E2.4 Exhaust Door Control Unit J883, Removing and Installing](#), page 110.

8 - Bolt

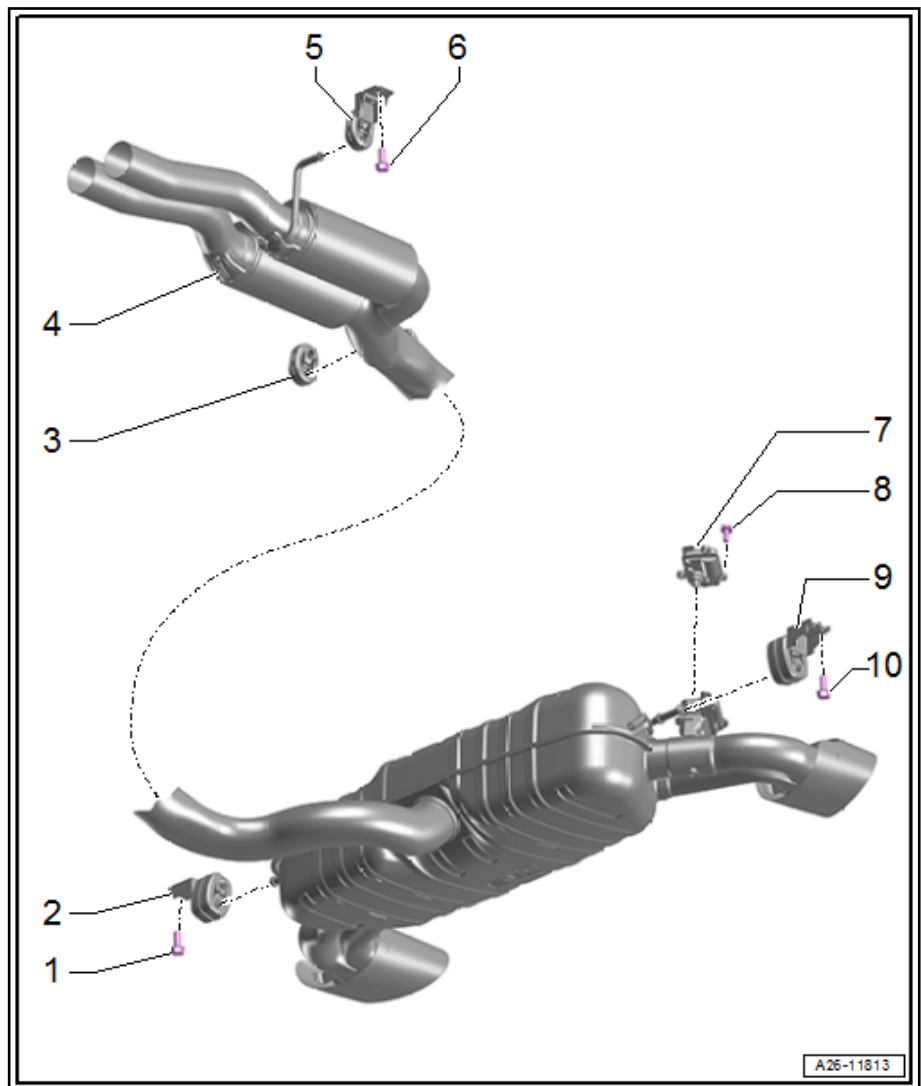
- ☐ 9 Nm
- ☐ Replace after removing.

9 - Mount

- ☐ Always replace if damaged

10 - Bolt

- ☐ 23 Nm

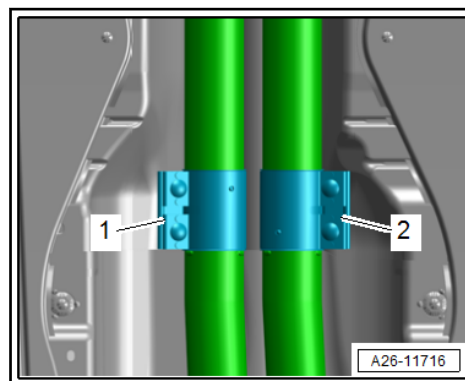


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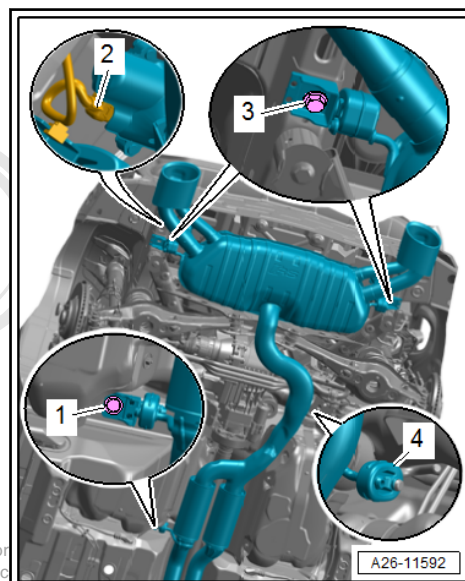
1.2 Muffler, Removing and Installing

Removing

- Roadster: remove the diagonal brace. Refer to ⇒ Body Exterior; Rep. Gr. 66; Underbody Trim Panel; Underbody Trim Panels, Removing and Installing.
- Remove the tunnel brace. Refer to ⇒ Body Exterior; Rep. Gr. 66; Underbody Panel; Tunnel Brace, Removing and Installing.
- Loosen the threaded connections on the clamping sleeves -1 and 2-.



- Disconnect the left and right connector -2- from the exhaust door control unit.



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WARNING

Risk of accident due to the heavy weight of the muffler.

- A second technician is required for the following work steps.

- Disengage the retaining loop -4-.
- Remove the bolts -1 and 3- and remove the muffler.

Installing

Install in reverse order of removal and note the following:

- Install the exhaust system without tension. Refer to ⇒ [S1.3 system, Installing without Tension”, page 107](#) .

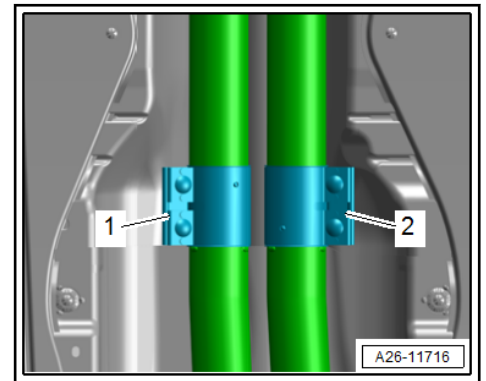
Tightening Specifications

- ◆ Refer to ⇒ [-1.1 Muffler”, page 105](#)
- ◆ Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 26; Emissions Control System; Overview - Emissions Control System.
- ◆ Diagonal brace and tunnel brace. Refer to ⇒ Body Exterior; Rep. Gr. 66; Underbody Trim Panels; Overview - Underbody Trim Panels.

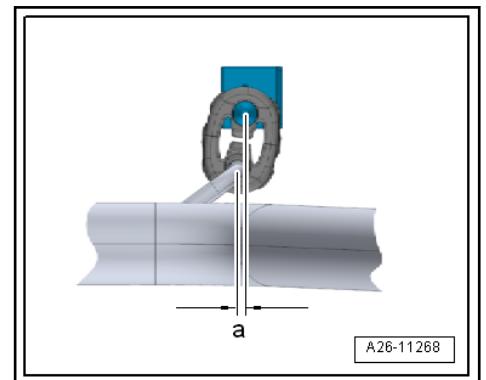
1.3 Exhaust System, Installing without Tension

Exhaust System, Aligning

- Align the exhaust system when cold.
 - Loosen the threaded connections on the clamping sleeves -1 and 2-.
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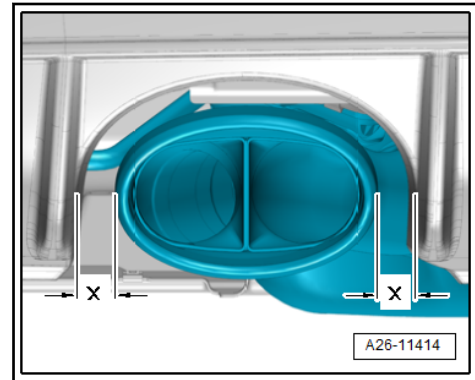


- Push the exhaust system front section far enough forward until the pre-load on the retaining loops at the exhaust pipe -a- = 5 mm.





Tail Pipes, Aligning



- Align the rear muffler so that the space between the opening for the bumper and the tail pipes is the same.
- Dimension -x- left = dimension -x- right.
- Loosen the rear muffler mounting to align the tail pipes.

Tightening Specifications

- ◆ Refer to ⇒ [-1.1 Muffler”, page 105](#)
- ◆ Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 26; Emissions Control System; Overview - Emissions Control System.

1.4 Exhaust System, Checking for Leaks

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 26; Exhaust Pipes/Mufflers; Exhaust System, Checking for Leaks.



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2 Emissions Control System

⇒ [-2.1 Emissions Control System", page 109](#)

⇒ [C2.2 onverter, Removing and Installing", page 109](#)

⇒ [C2.3 atalytic Converter/Exhaust Pipe, Removing and Installing", page 109](#)

⇒ [E2.4 xhaust Door Control UnitJ883, Removing and Installing", page 110](#)

2.1 Overview - Emissions Control System

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 26; Emissions Control System; Overview - Emissions Control System.

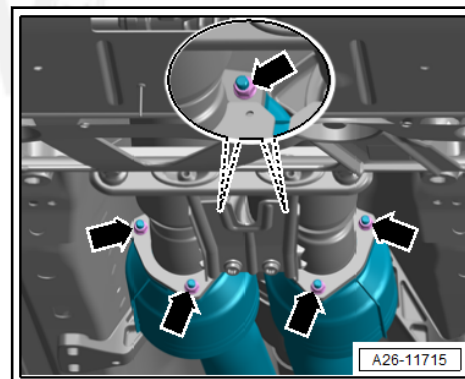
2.2 Catalytic Converter, Removing and Installing

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 26; Emissions Control System; Catalytic Converter, Removing and Installing.

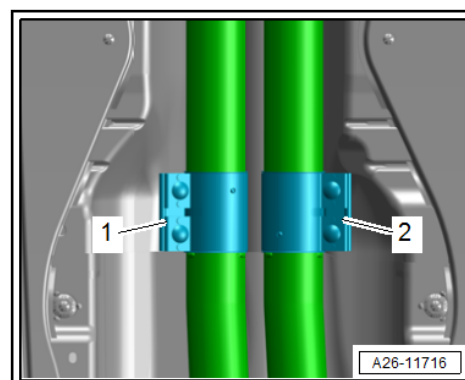
2.3 Rear Catalytic Converter/Exhaust Pipe, Removing and Installing

Removing

- Remove the corresponding nuts -arrows-.



- Loosen the clamping sleeve -1 or 2-, and remove the rear catalytic converter with the clamping sleeve-.



Installing

Install in reverse order of removal. Note the following.

- Replace the seal and self-locking nuts after disassembly.

Tightening Specifications

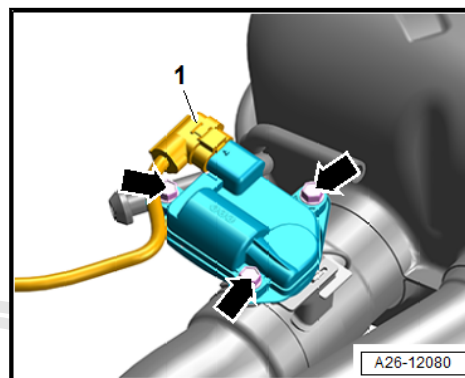
- ◆ Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 26; Emissions Control System; Overview - Emissions Control System.

2.4 Exhaust Door Control Unit -J883-, Removing and Installing

The procedure applies to the Exhaust Door Control Unit -J883- and the Exhaust Door Control Unit 2 -J945-.

Removing

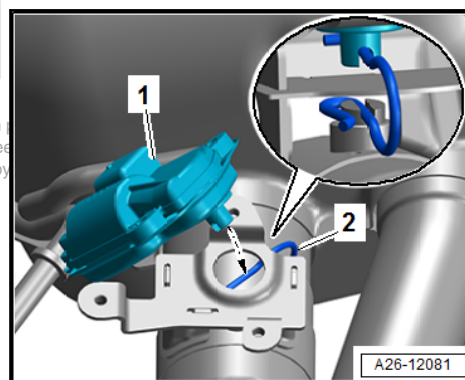
- Disconnect the connector -1-.



- Lower the rear section of the exhaust system. Refer to ⇒ [R1.2 removing and Installing", page 106](#) .
- Remove the bolts -arrows- and remove the exhaust door control unit.

Installing

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Install in reverse order of removal and note the following.

- Install the exhaust door control unit -1- at the same time pay attention to the correct seating of the C-brackets -2-.



Note

install the exhaust door control unit connector first after correct assembly, to prevent movement of the positioner when loose.

After installing the exhaust door control unit the basic setting must be performed. Refer to Vehicle Diagnostic Tester.

- Under OBD-capable system, Engine electronics J623 perform the Adapt the exhaust Door Control Units - J883 / -J945 function.

Tightening Specifications

- ◆ Refer to [⇒ -1.1 Muffler", page 105](#)



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3 Exhaust Temperature Regulation

All procedures and components are described. Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep. Gr. 26; Exhaust Temperature Regulation.



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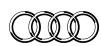
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28 – Ignition/Glow Plug System

1 Ignition System

Refer to ⇒ Servicing – 5-Cylinder 2.5L TFSI Engine; Rep.
Gr. 28; Ignition System.

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2 Revision History

DRUCK NUMBER: A005A017921

Factory Edition	Edit Edition	Job Type	Feedback	Notes	Quality Checked By
11.2 020	01/07/2021	Factory Update	N/A		Eric P.
12.2 018	03/06/2019	Factory Update	N/A		Eric P.
09.2 018	10/02/2018	Factory Update	N/A		Eric P.
03.2 017	03/31/2017	Factory Update	N/A	Performed Factory update.	Juan S.
02.2 017	01/31/2017	Factory New	N/A		Eric P.

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Cautions & Warnings

Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Audi retailer or other qualified shop. We especially urge you to consult an authorized Audi retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Audi.
- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.
- Audi is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Audi retailer parts department for the latest information.
- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the Audi Factory Approved Scan Tool (ST).
- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.
- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.
- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.
- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.
- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.
- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.
- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.

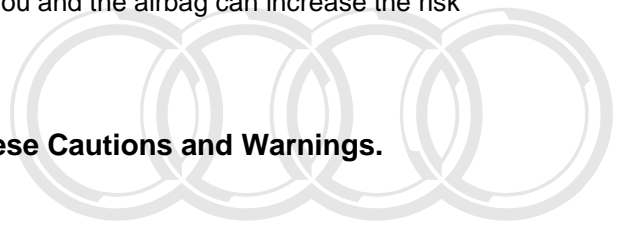
Cautions & Warnings

- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.
- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.
- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.
- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.
- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly, do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Audi specifications. Makeshift tools, parts and procedures will not make good repairs.
- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.
- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.
- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.
- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.
- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.
- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.
- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.

Cautions & Warnings

- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).
- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Audi Service technicians should test, disassemble or service the airbag system.
- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.
- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Audi Service technicians using the Audi Factory Approved Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.
- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.
- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

I have read and I understand these Cautions and Warnings.



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